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The impact of industrial funding on NARDAC operations: a marketing perspective

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NAVAL POSTGRADUATE SCHOOL
Monterey, California

THESIS

THE IMPACT OF INDUSTRIAL FUNDING
ON NARDAC OPERATIONS:
A MARKETING PERSPECTIVE

by

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and
Duane Harwood Douglas

March 1987

Thesis Advisor: Kenneth J. Euske

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The Impact Of Industrial Funding
On NARDAC Operations:
A Marketing Perspective

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ABSTRACT

This thesis examines in detail the management strategies employed at three different NARDACs--San Diego, San Francisco, and Washington D.C. Specific emphasis is given to the marketing of ADP services since October 1983, when NARDACs became Navy Industrial Fund activities. A detailed marketing audit of each organization is presented, and the strengths and weaknesses of marketing strategies employed at each NARDAC are assessed. The pros and cons of the different approaches are examined, recommendations are made, and a baseline for the development of an effective approach to marketing ADP services in the Navy is established. Central to the entire analysis is the understanding that NIF demands that NARDACs be operated as businesses. The authors conclude that managers at every echelon must fully come to grips with what operating as a *business* implies if NARDAC operations in the NIF environment are to reach their full potential.

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I. INTRODUCTION

A. GENERAL OVERVIEW

The seven Navy Regional Data Automation Centers (NARDAC's) were created to support the expanding needs of the Navy for non-tactical automatic data processing (ADP), and to provide more centralized control over the Navy's huge investment in ADP assets. Initially, NARDAC's were set up as "Mission Funded" activities. This meant that each NARDAC was allocated funds, through the normal DOD budget process, to maintain ongoing operations. The NARDAC then simply provided services to its customers at no apparent direct cost to them, and an equitable balance was theoretically struck between user needs and NARDAC capability to satisfy those needs.

This arrangement was abandoned in favor of one which was hoped to improve cost accounting procedures and to provide a direct incentive for customers to economize in their use of NARDAC services. NARDAC transitioned from a "Mission Funded" activity to a Navy Industrial Fund (NIF) activity, which meant that NARDAC customers, instead of receiving services for "free," were required to operate on a strict "pay as you go" basis. Also, customers would be allowed to use NARDAC, or any other source of ADP services, at their discretion. This move initially sent shock waves throughout the NARDAC community. Suddenly, by direction of higher authority, all NARDACs Navy-wide, along with their customers, were thrust into an experiment in free enterprise for which few, if any, of them were particularly well prepared. This thesis examines the results of that experiment. It focuses specifically on the approaches taken at three different NARDAC's--San Diego, San Francisco, and Washington, D.C.--toward adopting and implementing a strategy to market ADP products and services in the more competitive environment created by NIF.

B. RESEARCH QUESTION

Two basic research questions were established. First, what did the NARDACs do, in response to the change in their funding base, to ensure that they would not only continue to attract new customers, but also retain their existing client base? In other words, given the limited resources and constraints imposed on each NARDAC as non-profit, government agencies, how did they cope? What specific marketing strategies did they develop?

The second research question is the more problematic one, for it addresses the issue of dealing practically and realistically with operating under the rules of NIF. Stated succinctly, what is the best, or most appropriate, marketing strategy for a NARDAC to have? The ultimate goal of our study is to establish a baseline for the development of an effective approach to marketing ADP services in the Navy--i.e., some practical recommendations that a NARDAC commanding officer might use.

C.   RESEARCH APPROACH

Answers to the first research question are contained in Chapters II through V. First, an historical review is presented for purposes of promoting a firmer understanding of why the Naval Data Automation Command (NAVDAC), the parent command of all NARDACs, was created. The goals and objectives of that organization are highlighted in the context of its impact and influence on NARDAC operations. Also, the changeover from the mission funding environment to the NIF environment is explored, and placed in historical perspective.

Chapters III through V focus directly on the current marketing strategies being employed by the three NARDAC's under review. For this part of the research, the authors conducted a detailed marketing audit of each of the NARDACs. The objective was to establish specific marketing measures of effectiveness, which could be used to compare and contrast the various strategies employed on an equitable basis. To accomplish this, the marketing audit approach recommended by Goetsch (1983, p. 14), Kotler (1975, pp. 57-69), and others was employed to gain insight into each regional center's marketing performance. "A marketing audit is an independent examination of the entire marketing effort of an organization covering objectives, programs, implementation, organization, and control, for the purpose of determining and appraising what is being done and recommending what should be done in the future."(KOTLER, 1983, p. 56)

The marketing audit is designed to provide an analysis of an organization's marketing vitality. It seeks to evaluate the organization in three major areas: The marketing environment of the organization, including its markets, customers, competitors, and external environment; the marketing system within the organization, including the organization's objectives, programs, implementation, and organization; and the marketing activities within the organization, specifically its products, pricing, distribution, personal contact, and promotional activities. To accomplish this task, the

marketing audit must consist of a set of clearly formulated questions, the answers to which will provide the insight into marketing performance which we seek. The marketing audit for this study was adapted from Goetsch and Kotler, and modified by the authors to fit the NARDAC organizational profile. The specific audit questions are contained in Appendix A.

Finally, Chapter VI consolidates the analysis, points out common threads of success or failure in the three overall strategies, identifies marketing considerations that may have been overlooked or ignored, and recommends a general course of action which commanding officers might use to implement an effective marketing effort.

II. HISTORICAL PERSPECTIVE

A. OVERVIEW

This chapter provides insight into the creation of the Naval Data Automation Command (NAVDAC), its mission, goals, and functions. The relationships established between NAVDAC and its subordinate commands, the Navy Regional Data Automation Centers (NARDACs), are examined. Finally, the reader is provided with an overview of the Navy Industrial Fund, as it relates to current NARDAC operations.

B. NAVDAC CREATION

In 1968, OP-91 (Director Information Systems Division, Chief of Naval Operations) was created to manage automatic data processing within the Navy. OP-91's organizational charter evolved from the findings of a 1966 Navy ADP reorganization study which called for ". . . a strong, centralized organization in OPNAV to coordinate and control information and data systems." (BEASLEY, 1984, p. 10) However, the Navy's data processing organizations remained decentralized under OP-91, and in 1975 the General Accounting Office (GAO) compiled a report which strongly criticized the Navy's management of its non-tactical data processing assets. It cited waste and redundancy of ADP resources and non-standardization of equipment and procedures. (PARISH, 1980, p. 54) The GAO report prompted the Navy to conduct an in-house examination of its more than 400 data processing installations. The Navy study validated the GAO report, and reiterated the need for procedural and hardware standardization to reduce redundancy and inefficiency in the management of ADP resources. As a result of this reorganization study, a new command, the Naval Data Automation Command (NAVDAC), was established on January 1, 1977. NAVDAC is sponsored by the Director, Command, Control and Communications Programs (OP-094), under the Chief of Naval Operations. (NAVDACHQINST, 1982, p. 1-1) Its principle objectives are ". . . to improve the effectiveness of ADP systems in support of Navy operations, to exploit all the potentials of ADP and teleprocessing technology in multi-command and multi-functional ADP systems, and to improve the overall management of the Navy's ADP resources." (PARISH, 1980, p. 59)

C. NAVDAC MISSION/COMMAND GOALS/FUNCTIONS

NAVDAC's mission is to ". . . administer and coordinate the Navy Non-tactical Automatic Data Processing (ADP) Program. This responsibility includes collaboration of ADP matters with all ADP claimants; development acquisition/ utilization of ADP equipment (ADPE) and services contracts; sponsoring of ADP technology, and career development and training of ADP personnel." (NAVDACHQINST, 1982, p. 1-1) To gain an appreciation for the current management direction of NAVDAC, the reader can refer to Appendix B, which presents a summary of NAVDAC's stated command goals, and Appendix C, which delineates NAVDAC's operational functions.

D. THE NAVDAC/NARDAC RELATIONSHIP

Located at the Washington Navy Yard, NAVDAC is the parent command of seven geographically dispersed Navy Regional Data Automation Centers (NARDACs), and seven smaller Navy Data Automation Facilities (NAVDAFs). Most of the NAVDAFs are satellite facilities reporting to NARDACs in their respective geographic regions. There are exceptions, however; for example, NAVDAF Pearl Harbor is an independent facility which reports directly to NAVDAC headquarters in Washington. The seven NARDACs were formed from existing facilities at major shore installations throughout the United States. The NARDAC site locations were selected primarily on the basis of their proximity to major users of ADP services. Five of the seven NARDACs, for example, are co-located with Naval Air Rework Facilities (NARFs),[1] and these facilities continue to account for a substantial share of NARDAC revenue in each case. Appendix D lists the locations of all the NARDACs and NAVDAFs.

NAVDAC's intent was to establish "centers of excellence," (NAVDACINST 5230.7, 19 December 1985, p. 1) where Navy commands and other government agencies could get expert technical guidance and support for their data processing needs, as well as programming support, telecommunications and networking assistance, distributed processing help and other state of the art assistance for any non-tactical computer application. To bring the size of the NAVDAC community into perspective,

When compared with computer services companies in private industry, NARDACs emerge as a major DP service organization. With annual revenues of $175 million in 1985, the NARDACs as a group would rank 89th within Datamation magazine's top 100 DP organizations if they were a commercial firm. (COOPERS & LYBRAND, May 1986, p. INTRO-2)

---

[1] Norfolk, San Francisco (Alameda), San Diego, Pensacola, Jacksonville

Prior to 1 October 1983, NARDACs were "mission funded" activities and were financed through the traditional Operations and Maintenance, Navy (O&MN) budgeting process. This meant that each NARDAC was provided with operating funds from higher authority to perform its mission. These funds were managed under the Resource Management System (RMS) of accounting. Under RMS, NARDACs could charge customers for ADP services only if direct, identifiable and out of pocket expenses could be shown to have accrued from services performed. This meant that customers could not be charged for military labor costs, administrative, or other overhead costs, because RMS does not break out these types of costs in sufficient detail. (BRANSON, 1984, p. 48) Another inadequacy of the system was the fact that there were no incentives in place which required customers to economize on their use of ADP services.

In an effort to resolve these inadequacies, the Secretary of the Navy initiated action to include the NARDACs among activities suitable for operations under the Navy Industrial Fund (NIF) concept. The next section provides background information on the origins of NIF in the Navy.

E.   NAVY INDUSTRIAL FUNDING

To promote efficiency and economy of operations in the Department of Defense, Congress authorized the Secretary of Defense to establish "working capital" funds. These funds were to be used to capitalize industrial type activities so they could operate financially in much the same way as a private sector corporation. The intent was to promote an atmosphere of competitiveness which would improve efficiency and effectiveness of management and production level employees by providing ". . . management tools comparable to those utilized by efficient private enterprises. . . ." (DOD Dir 7410.4, 1972, p. 1-2)

Additionally, the fund was designed to improve cost control "by requiring a contractual relationship between producer and ordering agencies." (DOD Dir 7410.4, 1972, p. 1-2) The specific objectives for establishing Industrial Funded operations in the Department of Defense are contained in Appendix E.

The Navy's version of DOD's Working Capital Fund (WCF) is called the Navy Industrial Fund, or NIF. It is

. . . a revolving fund used as a source of financing for work (or services) that will be paid by the customer after completion of the job. The activity performing the work pays for costs incurred out of its working capital fund during job accomplishment. When the job is complete, the customer is billed and the fund is reimbursed." (PRACTICAL COMPTROLLERSHIP, 1982, pp. G-3 & 4)

In this way, the government customer is given incentive to economize in his use of services which were formerly provided to him for "free."

The fiscal goal of a NIF activity is to cover its costs. The NIF activity owns its own assets, accrues liabilities, and maintains accounting records much like a private business. One aspect of a NIF activity which is unlike a private sector business is that a NIF activity is required to hold its rates constant throughout a fiscal year. This "rate stabilization" allows its customers, who are primarily mission funded, to plan expenditures on a fiscal year basis. (NAVCOMPTINST 7600.23B, 1978, pp. 1-5)

The following section describes the events which led to the decision to include NARDACs in the activities funded under the rules of the Navy Industrial Fund.

F. IMPLEMENTATION

On 7 February 1978, the General Accounting Office (GAO), published a report entitled, "Accounting for Automatic Data Processing Costs Needs Improvement." (SCOTT, 1984, p. 17) This report stated that government agencies were utilizing inadequate accounting methods to control ADP costs. The GAO then issued guidelines stating, ". . . all significant elements of cost directly related . . . to performing data processing functions should be collected and accounted for in ways useful for management, budgeting, and external reporting." (SCOTT, 1984, pp. 17-18) As a result, the Navy requested that NARDACs be included in the President's fiscal year 1984 budget as Navy Industrial Funded activities.

Initially, NARDAC key managers were almost universally convinced that operating in the NIF environment, with its implication of direct competition against private sector as well as other DOD agencies, would result in failure. This sentiment was expressed by Julius Lewis, NARDAC WASHINGTON Director of Data Processing Installation (Code 50). "When we first started, when we heard about NIF, all of us were very concerned. We knew that if we were not competitive, that all the users could walkout. We didn't know if we were competitive. . . . We had fears that we were going to go out of business." (LEWIS, 1986) The prevailing rationale was that a "transition" period was needed during which clients were

. . . mandated to continue to use NARDAC services if those services were used during the previous year. This moratorium (was expected to) . . . guarantee that the individual NARDACs (would) have a solid customer base immediately after NIF implementation. (AMERICAN MANAGEMENT SYSTEMS, 1983, pp. i-ii)

The moratorium was established by SECDEF for one year, FY 1984, after which clients would be allowed to turn to commercial vendors or other alternatives to get work completed.

	1984	1985	1986
NARDAC WASHINGTON	42.3	54.1	64*
NARDAC SAN DIEGO	17.4	17.4	19.8
NARDAC SAN FRANCISCO	13.3	15.7	15.9
*Estimated			

Figure 2.1   Gross Revenue (Millions $).

Figure 2.1 depicts the revenue generated by the three NARDACs for FY 84 through FY 86. The growth in revenues experienced at each of the NARDACs over this period immediately following NIF implementation tends to suggest that the fears of those involved were unjustified. Significant customer base erosion apparently did not occur in the NIF environment. The figures also suggest that the one year moratorium imposed was probably not needed.

However, a more profound conclusion can be drawn from the forgoing observations. The sudden decision to transition to NIF, the fears expressed by management, the imposition of the "moratorium," and other factors suggest that the NARDAC organization was not in a position to accurately assess the potential operational impact on the organization of the changeover to NIF. No information existed, no supporting mechanism was in place, to provide the kind of information that was needed to react in an informed manner to this new way of doing business. That the NARDACs lacked the marketing orientation and expertise they needed to support such a decision underscores the fact that

. . . non-profits need current and accurate information. A volatile regulatory environment, the unexpected entry of for-profit competitors, sudden changes in the politics of funding or the appearance of generic competition can all generate a sudden atmosphere of jeopardy where the threatened traditional service organization must take stock of its strategic position and develop immediate and effective responses. (SWEENEY, 1985-86, p. 94)

It is clear that non-profit organizations, especially those operating in a quasi-competitive environment (e.g., NARDACs), are involved in marketing whether or not they are conscious of it. Their degree of involvement directly determines their ability to deal effectively with the changes that develop in the organization's internal and external environments. Since 1983, marketing has become a recognized need at the NARDACs and has attracted high level command interest. All organizations, non-profit and for-profit, must be familiar with formal marketing principles if they are to be effective in achieving their goals. "Organizations in a free society depend upon voluntary exchanges to accomplish their objectives. Resources must be attracted, employees must be stimulated, customers must be found." (KOTLER, 1975, p. 9) Kotler has further stated that ". . . managers of nonprofit organizations are just beginning to think in marketing terms," (1976, p. 12) and this rationale can be applied to NARDACs as well. With the idea in mind that ". . . a marketing audit can be educational as well as diagnostic," (KOTLER, 1975, p. 56) the following three chapters examine in detail the marketing environments, systems, and activities which currently exist at three different Navy Regional Data Automation Centers.

III. NARDAC WASHINGTON, D.C. MARKETING STRATEGY

A. OVERVIEW

NARDAC WASHINGTON is by far the largest and most diversified of the regional data automation centers. It is physically located at the Washington Navy Yard, but also operates sites at several locations contiguous to clients in the Washington metropolitan area. With an annual operating budget in excess of S60 million, it is more than twice as big as the next biggest NARDAC. Annual revenue for 1986 exceeded S64 million.

The organization is staffed by approximately 750 civil service and military personnel, and is continually augmented with contractor personnel to support ongoing operations. A breakdown of NARDAC WASHINGTON's personnel profile is depicted in Figure 3.1, and the command's organizational chart is shown in Figure 3.2. Because of its relatively large size, its location in the nation's capitol, and its wide, diverse customer base, NARDAC WASHINGTON is perceived as a unique entity in the NARDAC community.

B. SYSTEMATIC MARKETING AUDIT RESULTS

The following comments summarize the results of the marketing audit conducted by the authors at NARDAC WASHINGTON. The numbered remarks correspond directly to the questions listed in Appendix A. In conducting this audit, the authors' strategy was to achieve objectivity by drawing conclusions from the consolidated responses of key decision makers in the organization. The Commanding Officer, Executive Officer, Marketing Director (Code OOTL), three Production Directors (Codes 42, 50, and OOTOA), and the Comptroller (Code 07) were among those interviewed. Where appropriate, individual opinions are identified for attribution; otherwise, the responses provided represent the authors' interpretation of the general perspective of the entire organization based upon all responses to the specific question under review.
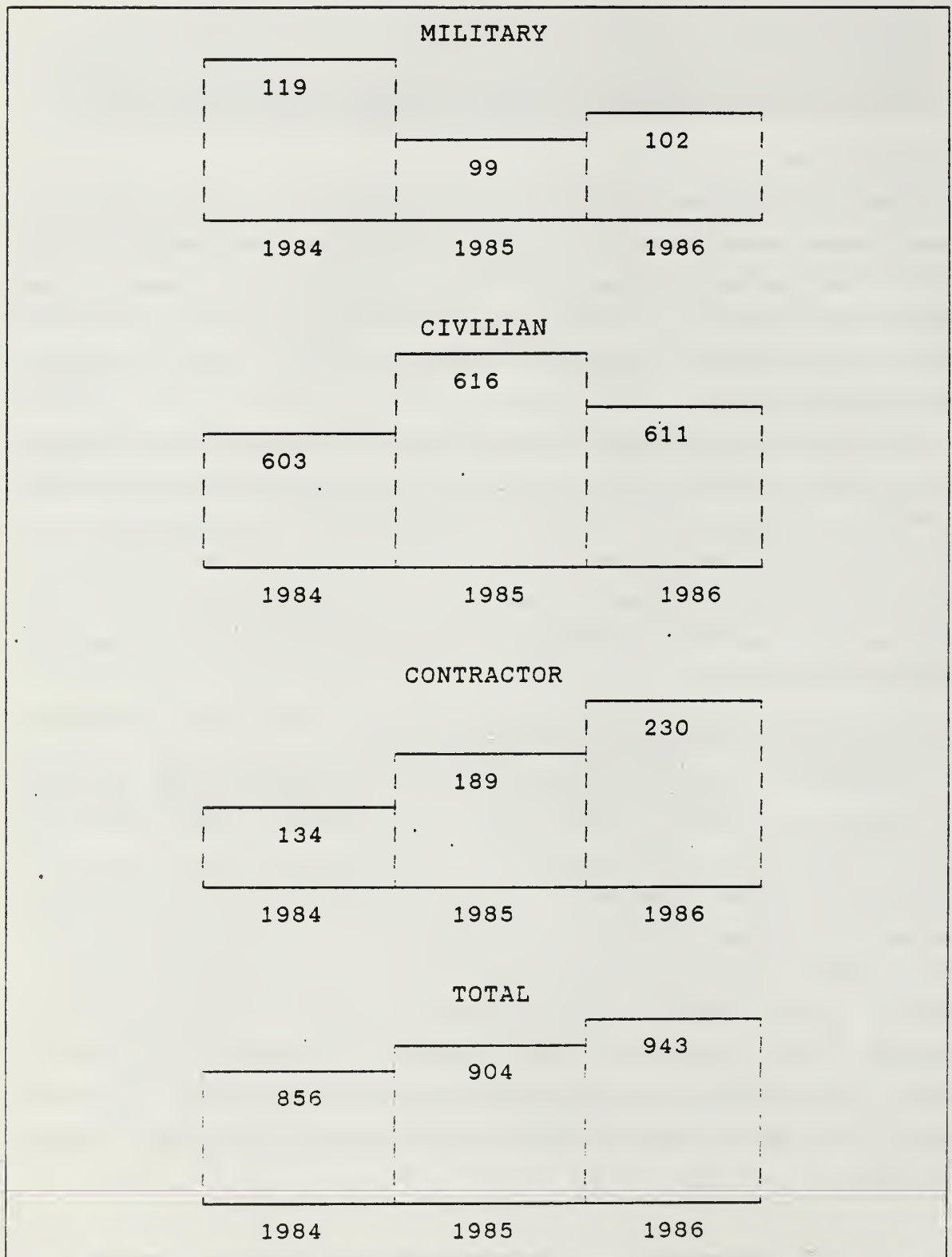
Figure 3.1 NARDAC WASHINGTON Personnel Profile (May 1986).
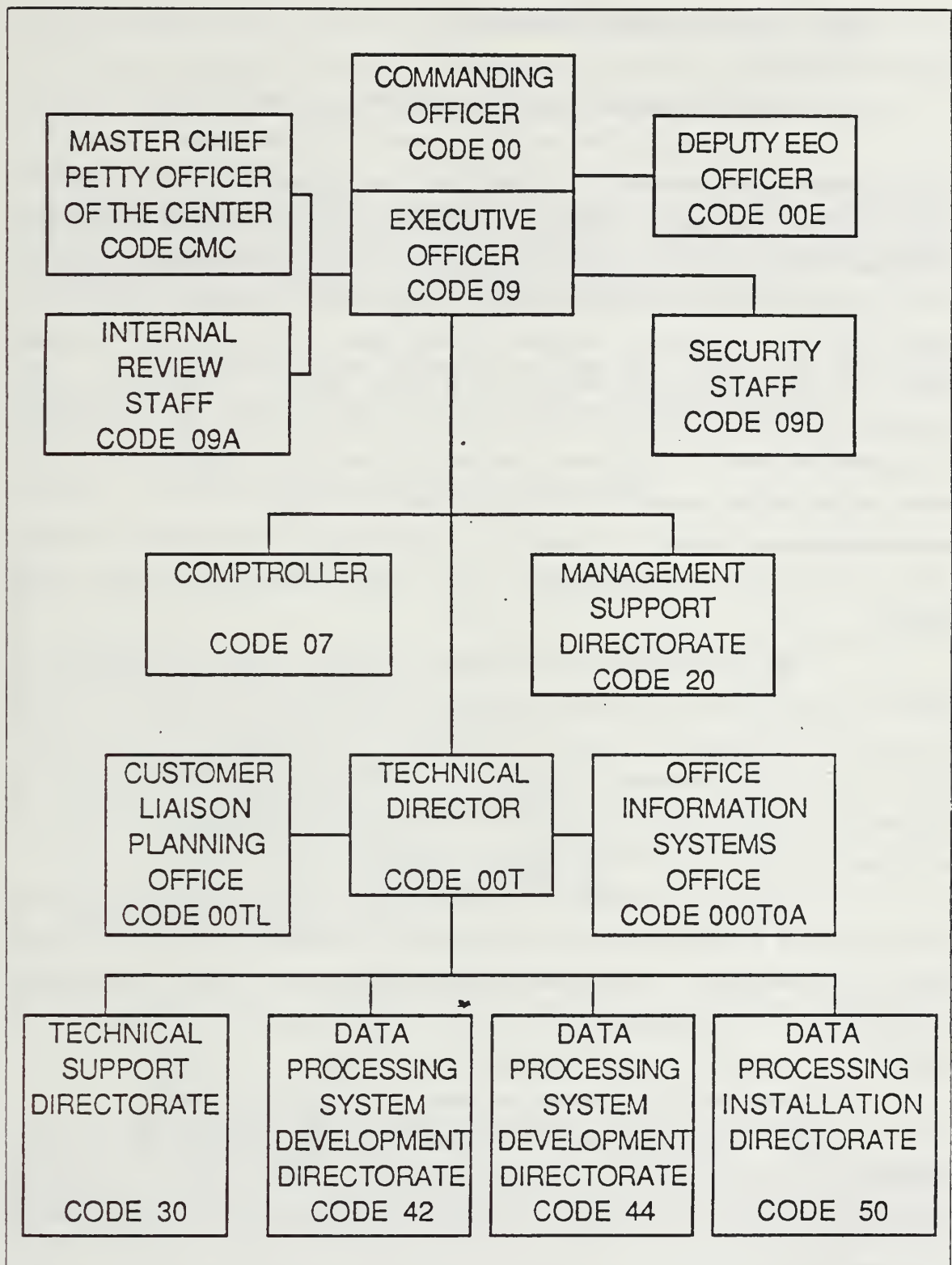
Figure 3.2 NARDAC WASHINGTON Organizational Chart.

1. **PART I. The Marketing Environment**

   a. *Markets*:

      (1) Who/What are the organization's major markets?

         (a) As identified by top management. Top management was quick to identify "Systems Development" (i.e., products/services provided by Codes 42 and 44) as the NARDAC's top revenue generator, suggesting a marketing orientation towards production activities that have had proven success. Additionally, both the Commanding and Executive Officers included "Life-Cycle Management Support"[2] for larger Navy and other DOD activities in their focus of major market segments. Finally, top management has taken a long range view of the growing "office automation" market as a potential source of future business--both in its own right and for the potential "spin-off" applications that will inevitably result as "micro" customers develop wider ranging computer needs (e.g., access to larger databases, LCM and telecommunications support.) Nonetheless, microcomputer applications are not currently viewed by top management as one of the organization's major market segments.

         (b) As identified by marketing personnel. While recognizing that systems development and large scale mainframe applications are currently the "bread and butter" of the organization, marketing personnel had a distinct focus toward office automation and micro-computer training as NARDAC's major potential market. Exploitation of existing markets for mainframe services was identified as an important, but currently unsatisfied, marketing department objective.

         (c) As identified by production department heads. Production Directors showed a decided parochial orientation toward their own particular market segments and customers. Their answers generally reflected a "stick to the knitting" type approach. Their marketing concept centered around their own particular area of expertise.

      (2) Are the Markets/market segments expanding or declining?

      IBM mainframe compatible workload operations, including microcomputer enhancement, is seen as the most important expanding market segment. To move in that direction, one of the NARDAC's operational objectives is to make its equipment,

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[2] "Life cycle management (LCM) is the process for administering an Automated Information System (AIS) over its whole life with emphasis on strengthening early decisions which shape AIS costs and utility. These decisions must be based on full consideration of functional, ADP, and telecommunications requirements in order to produce an effective AIS." (DOD Dir 7920.1, 1978, p. 2)

to the maximum extent possible, compatible with tools and software packages which are currently available off the shelf. To achieve economies in satisfying client demand, achieving complete IBM compatibility is considered essential for future operations.

A majority of commercial software vendors develop software only for the industry-standard (i.e., IBM compatible) hardware suites. Sperry mainframe users are limited to the software products that the manufacturer and a small number of third-party vendors develop. The smaller selection of software limits the capabilities of NARDACs as regional DP service centers and increases operating costs. (COOPERS & LYBRAND, MAY 1986, p. GM-3)

No declining market segments were identified by any of the interviewees. Currently, formal market/market segment analysis is not being performed.

b. Customers:

(1) Who are current and potential customers?

CUSTOMER	% TOTAL REVENUE
Chief of Naval Operations (CNO)	17 %
Naval Sea Systems Command (NAVSEA)	17 %
Navy Regional Finance Center (NRFC)	15 %
Naval Military Personnel Command (NMPC)	10 %
Navy Comptroller (NAVCOMPT)	7 %
Naval Data Automation Command (NAVDAC)	6 %
Military Sealift Command (MSC)	4 %

Figure 3.3   NARDAC WASHINGTON Major Customers.

Of approximately 82 current customers, 7 account for about 75% of all NARDAC WASHINGTON revenue, as shown in Figure 3.3. With regard to potential future customers, the Washington, D.C. arena affords NARDAC Washington an almost limitless market, including numerous smaller Navy and other Department of Defense (DOD) staffs/commands that are currently not using NARDAC for ADP support, and larger staffs currently being supported for only a small fraction of their total ADP needs.

(2) Are current customers satisfied? Have steps been taken to measure customer satisfaction?

There is currently ". . . no vehicle for measuring customer satisfaction," according to NARDAC's executive officer, Commander Barbara Stankowski. (1986) Although a "trouble desk" exists for customers to contact NARDAC when they need help, no measures have been taken to monitor trouble desk activity, to keep statistics on types of calls received, to perform trend analysis, or to develop reliability parameters. No customer surveys/market analyses have been performed. A special assistant to the executive officer, responsible for internal control, has been tasked with consolidating the trouble desk reporting data, but a formal program for measuring customer satisfaction has yet to be implemented.

c. *Competition*:

(1) Who are the organization's major competitors, both within the government and in the private sector?

To determine what NARDAC's real competition is, it would be necessary to perform a detailed analysis of all commands in the Washington, D.C. area. Each command's current ADP activities could be analyzed and statistics compiled to determine the market share of all private and commercial ADP activities serving the market. Such a study is far beyond the scope of this thesis, but should not be beyond the scope of an enterprise which depends on the marketplace for its existence. Yet, no formal analysis of NARDAC's competition has been performed. This may be due to the fact that the current supply/demand situation in Washington, D.C. with respect to ADP services is such that a healthy, but non-hostile competitive environment exists. The competitive entities (e.g., other government sources of ADP services, or commercial contractors) serve to positively influence NARDAC's (and each other's) efforts to supply a quality product at a competitive price.

2. PART II. The Marketing System

a. *Objectives*:

(1) Are the organization's long run and short run overall objectives and marketing objectives clearly stated? Are they consistent with NAVDAC policy and objectives?

Long run objectives have been formulated and were synopsized in the August 1986 edition of CO's NOTES, the NARDAC Washington quarterly newsletter. (LUMSDEN, 1986) These are summarized in Appendix F. The objectives were

developed with the assistance of a professional management consulting firm which also provided guidelines to NARDAC planners for the development of a long range integrated business plan. These guidelines included a detailed plan of attack for the development of long and short run business objectives, and a recurring schedule for monitoring progress and reevaluating objectives on a quarterly basis. A schedule for implementation of the first NARDAC Washington Long Range Business Plan by January 1987 is reproduced in Appendix G. The final plan requires additional inputs from production directorates, and therefore has not yet been published in an official NARDAC document.

(2) & (3) Are the marketing objectives measurable? Are the marketing objectives reasonable given current resources and opportunities?

Although a "NARDAC Washington Strategic Marketing Plan for 1986" was developed in response to a Commander NAVDAC directive, it is difficult to identify any relationship to the strategic business planning process currently underway in the organization. The goals in the marketing plan are inconsistent with the newly formulated command goals and objectives. Specific marketing objectives designed to support the organizations's strategic business plan do not appear to exist.

b. Program:

(1) Does a core strategy exist to support the stated objectives? Is the strategy in writing? Is it likely to succeed?

The core strategy to support the organization's stated objectives is still under development. The "old" marketing strategy had little value because it was not the result of a strategic planning process. Key decision makers recognize the fact that "if you don't have a planning process by which you develop and generate an *organizational* strategy, then you have no *marketing* strategy." (STANKOWSKI, 1986)

(2) Does the organization allocate enough resources to accomplish the marketing tasks?

Although a 00TL budget exists, the authors did not find any evidence that the budget has been tied to the specific marketing needs/objectives of the organization. Personnel assigned to 00TL and having marketing functions as their primary responsibility include the following:

(a) Director of Marketing (00TL)--this billet has recently been created and will be filled by an experienced GS-13 civilian manager.

(b) Assistant Director Customer Liaison--A military officer (0-3). At the time of this research, this officer was acting 00TL.

(c) Market Research Analyst--A civilian GS12/13.

(d)   Secretary--A civilian GS4/5.

(3) Are marketing resources allocated by market/customer commensurate with potential revenue return?

Resources are being applied toward specific market segments; for example, Code 42 dedicates human resources toward ensuring ongoing client satisfaction; Code 00TOA is engaged in the most visible marketing effort, an advertising campaign requiring the expenditure of funds equal to 10% of its budget. (ABLER, 1986) However, these activities do not appear to be coordinated. The appropriate level of effort to be applied in these areas has been left to the discretion of individual production directorates, and no assessment has been made as to the effectiveness of individual programs or their potential contribution margin. Additionally, marketing personnel are not involved in these decisions.

c. Implementation:

(1) Does the organization develop an annual marketing plan? Is the planning procedure effective?

The existing marketing strategy was developed to fulfill an administrative requirement, rather than to provide a means to achieve a defined set of organizational goals. A new marketing plan is scheduled to be developed in concert with the fiscal year 1987 business plan, but was not operational as of this writing.

(2) Does the organization implement control procedures (monthly, quarterly, etc.) to insure that its annual plan objectives are being achieved?

Formal control procedures for monitoring the achievement of marketing objectives could not be found. Weekly executive meetings and semi-annual strategic planning conferences do provide a forum for addressing such issues, but there is no system of checks and balances to measure the marketing effectiveness of the organization against a pre-defined standard. Additionally, the marketing audit format contained in the organization's marketing strategy is generic in many areas, and not specifically designed for the NARDAC organization.

(3) Does a mechanism exist (e.g., marketing information system, market planning meetings) to enable key managers to identify potential new markets or customers, or match idle capacity to customer needs?

The semi-annual strategic planning meetings provide an excellent vehicle for managers to identify and discuss potential new markets or customers, and to discuss issues such as the need to match idle capacity to customer needs. This process

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is not currently supported by an automated marketing information system which might help management identify developing trends or opportunities in the market.

(4) Are services provided to customers "equipment" oriented or "solution" oriented?

The organization "markets to the customer's need," according to Captain John McMillan, NARDAC WASHINGTON Commanding Officer. (1986) This is particularly true of systems development business, which is predominantly custom designed applications software for large customers. The current trend in the industry is to use off-the-shelf software (fourth generation languages or 4GL) to accomplish these type of jobs quickly and more efficiently. However, until very recently, NARDAC WASHINGTON was often compelled to rely on older, less efficient programming techniques. This is because much of the 4GL software available off-the-shelf is incompatible with the Sperry mainframe architecture, the traditional NARDAC standard. The authors did not explore the history of the procurement process which resulted in the selection of Sperry equipment at the NARDACs. However, the preponderance of non-IBM equipment in evidence at all of the regional centers suggests an historical procurement bias *against* the industry leader, IBM. Whatever the reasons for this bias, the trend must be (and, in fact, is beginning to be) reversed. In a competitive environment the NARDACs cannot be constrained by a complex. time consuming procurement process which may possibly result in the selection of a manufacturer which management clearly does not desire. The NARDACs must be given the flexibility to define their own product mix, based on sound planning, competent business judgement, and a full appreciation for the non-quantifiable criteria that can easily be overlooked in a bureacratic selection process. Only then can a strategy be developed which is oriented toward satisfying the customers needs--i.e., providing the customer services which are "solution oriented" and not "equipment oriented."

As the Navy's regional data processing centers, the NARDACs need to be able to utilize the vast selection of third-party software available on the market. The industry-standard computer environment is an IBM-compatible environment. The IBM-compatible environment incorporates the latest advancements in hardware technology with established and proven commercially available interfaces and operating software. No other environment provides a wider variety of applications packages and software development tools. These computer hardware suites will allow the NARDACs to provide the widest range of data processing services to customer activities in a cost effective manner. (COOPERS & LYBRAND, June 1986, p. GM-6)[3]

(5) Has any effort been directed toward automating certain marketing activities with existing computer resources?

The automation of marketing information is an OOTL objective that has not yet been implemented. (LUMSDEN, 1986) Statistics on customers, volume, products, prices, and other vital marketing information have not been compiled, electronically or manually, into an organized marketing database.

d. Organization:

(1) Does the commanding officer believe in marketing planning and is formal planning ingrained with all top managers?

The Commanding Officer has taken numerous initiatives to instill a commitment to the formal planning process. For example, he brought in a professional consulting firm to assist in providing a framework for the development of a formal business plan for the organization. Further, the CO organized and chaired the command's first ever strategic planning conference, during which every aspect of NARDAC Washington activity was reviewed and critiqued. This conference resulted in the publishing of a new mission statement and a detailed list of command objectives with strong marketing overtones (Appendix F), which in turn are designed to provide the basis for the formulation of more specific business objectives within each directorate. These detailed objectives will be reviewed and formalized at the next strategic planning conference. Finally, a decision was made to continue to hold strategic planning conferences on a semi-annual basis.

(2) Are all marketing functions under the direction of one executive who reports to the commanding officer?

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[3]NARDAC WASHINGTON has begun the process of conversion to a fully IBM-compatible mainframe environment. However, the authors observed no urgency to convert to IBM-compatibility at either NARDAC SAN DIEGO or NARDAC SAN FRANCISCO.

The Marketing Director, Code 00TL, does not report directly to the Commanding or Executive Officers. Instead, he reports to the Technical director, as indicated on the NARDAC Washington organizational chart. While this relationship is slightly at variance with the organizational structure of the other NARDACs, the current informal organizational practice is such that the 00TL (presently a Navy O-3) reports directly to the executive officer on most matters. Additionally, the role of the new 00TL (a GS-13) has not been formally defined. Discussions with key managers revealed a decided uncertainty as to the proper role of the marketing director and "just where (in the organization) the 00TL/09L rightfully belongs." (STANKOWSKI, 1986)

(3) Is he or she qualified by experience/educational background to act as the marketing director of a major ADP organization?

The Navy Lieutenant filling the 00TL billet at the time of this audit had neither a computer oriented subspecialty nor a formal educational background in marketing. Moreover, her total work experience is limited to that obtained at NARDAC WASHINGTON. A recently hired GS-13 was selected for the 00TL job on the basis of his marketing background. It will be up to him to define and effectively coordinate all marketing functions in the organization.

(4) Does he have an adequate supporting staff?

The new marketing director will be supported by a GS-12 researcher/analyst, a Navy 0-3, a secretary, and the independent marketing activities of each directorate. Since the scope of the marketing staff's activities has not yet been specifically defined, a definitive statement about the adequacy of the staff in terms of size and capabilities is not yet possible. However, ". . . most nonprofit organizations operate without any marketing personnel as such, with the possible exception of a public relations officer. . . ." (KOTLER, 1975, p. 229) Therefore, relative to most non-profit organizations, NARDAC WASHINGTON's marketing staff would have to be considered more than adequate.

(5) Do other key people in the organization understand and and practice the marketing concept?

Production directorates generally feel that marketing their particular products/services is a task best handled by the directorates themselves, as the "experts" in their fields. In this sense, individual directorates do indeed have a marketing focus. However, these independent efforts have tended to isolate the 00TL, who has not been actively involved in the planning, coordination, or control of many marketing

functions, and whose inexperience has limited her involvement in setting marketing goals and priorities for the organization.

3. **PART III. Detailed Marketing Activity Review**

   a. *Products/Services*:

   (1) What are the main products/services supplied by NARDAC?

   Figure 3.4 breaks out the major components of NARDAC WASHINGTON's revenue by type of resource. As can be seen from the chart, applications development and programming (systems development) is responsible for the largest share of NARDAC WASHINGTON revenue.

   b. *Price*:

   (1) To what extent are prices set on cost, demand, or competitive criteria?

   Prices are set by NAVDAC for each activity based on inputs received from the individual NARDACs. Theoretically, these prices reflect only the cost of providing services, and are uninfluenced by either market demand or competition. By congressional direction, NIF activities must operate strictly on a cumulative break even basis, and not on a "for profit" basis. (COMNAVDAC, 1984, pp. 1-2)

   (2) Do key personnel understand how prices are set?

   The pricing structure is sufficiently complex that only personnel very close to the problem really understand how prices are set. The comptroller has probably the most significant input in setting prices, which further supports the contention that costs are the primary determinants of price. Although ostensibly prices are "set" by NAVDAC, the price for services is arrived at through direct inputs from individual NARDAC estimates. (KEKICH, 1986)

   (3) How do customers psychologically interpret price level?

   The general consensus among those interviewed is that customers psychologically interpret NARDAC's prices as being too high, but NARDAC WASHINGTON receives very few complaints about price from its larger customers. Smaller customers, to whom ADP services are more a luxury than a necessity, voice more vehement complaints. Customers seem most concerned about the format of their billing for services. This issue was addressed in a study conducted for the Navy by Coopers and Lybrand, which stated,

> *The billing concept is confusing*. Because NARDAC bills consolidate units of computer resources into a master charge code, customers are not able to analyze project costs or identify specific task costs. Likewise, there is no way to identify a job that has been rerun because of a user-related error, since it is included with the rest of the charges. (1986, p. GM-8)

OTHER COMPUTER
OPERATIONS

OTHER

SPERRY MAINFRAME
OPERATIONS

SYSTEMS
DEVELOPMENT

6%

11%

11%

47%

24%

IBM MAINFRAME
OPERATIONS
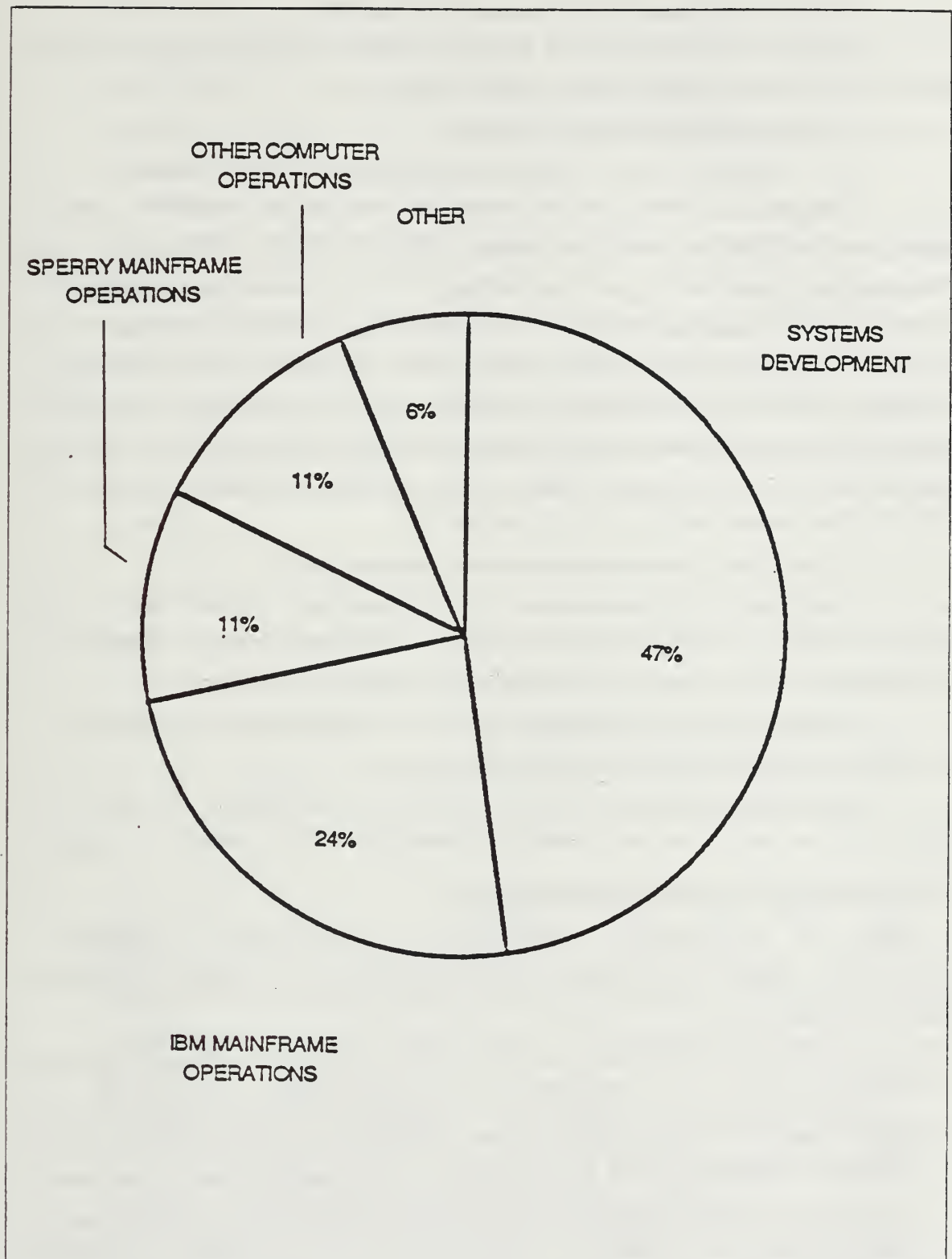
Figure 3.4   NARDAC WASHINGTON Revenue Components.

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(4) Would lowering/raising prices affect demand?

NARDAC WASHINGTON managers indicated that lowering or raising prices would likely have little or no impact on demand.

c. Advertising/Publicity/Public Relations:

(1) Are measures taken to enhance/promote the NARDAC image?

"Not enough" measures are taken to enhance the NARDAC image, according to NARDAC's Executive Officer. (STANKOWSKI, 1986) Many key decision makers in the Navy ". . .never heard of us! . . . ," according to NAVDAC Director, Mr. K. B. Hancock. (Interview, 1986) Promoting the NARDAC mission and image is a recognized need at the highest levels of Navy ADP management. Nonetheless, NARDAC Washington is fairly adept at promoting a positive organizational image, as evidenced by its periodic advertising in the *Sea Service Weekly* (Appendix H), and by other less visible public relations campaigns, such as its L.A.S.E.R. office automation program (Appendix I).

(2) Is advertising/image enhancement budgeted for?

Advertising/image enhancement is not specifically broken out in the organizational budget. 00TOA (Office Automation) is the only directorate/department that specifically allocates a portion of its budget for marketing ($25,000).

(3) Do themes, logo, and copy employed in advertising and public relations efforts add to or conflict with the organizational image?

Organizational logo and themes employed in advertising and copy are consistent with and serve to enhance NARDAC WASHINGTON's professional image.

C. MARKETING STRATEGY STRENGTHS

Analysis of the systematic marketing audit conducted at NARDAC WASHINGTON revealed the following obvious strengths in the organization's overall approach to marketing:

1. Its co-location with NAVDAC and proximity to numerous potential clients in Washington place this NARDAC in a competitive macroenvironment which is highly conducive to generating business. NARDAC WASHINGTON's broad customer base means that no one client is so powerful that it can exert economic influence on NARDAC operations. Its large business volume gives it greater control over defining its own product mix. For example, NARDAC WASHINGTON has placed far more emphasis on systems development than

either of the other NARDACs considered in this study (48% of 1985 revenue as compared to 10% for NARDAC SAN DIEGO and 11% for NARDAC SAN FRANCISCO.) Additionally, NARDAC WASHINGTON will be first to transition to complete IBM mainframe compatibility--a move seen as essential for continued long term growth.

Moreover, NARDAC WASHINGTON enjoys the advantage of a strategic geographical location. As an illustration of this fact, one of NARDACs largest clients, the Military Sealift Command, was brought "on board" not because of any specific marketing effort directed at that potential client; instead, MSC was pushed in the direction of NARDAC by higher authority after attempting to satisfy its ADP requirements via other means. Such "clients of opportunity" are far more likely to materialize in the Washington environment than elsewhere due to the large number of government staff organizations in the area requiring ADP support.

Finally, from the "no news is good news" perspective, NARDAC WASHINGTON apparently has a solid foundation of satisfied customers. These customers have not been directly queried on their *degree* of satisfaction. Nonetheless, they have shown no inclination to take their business elsewhere-- an option open to them in the NIF environment. We can conclude from this not only that these customers are reasonably satisfied with NARDAC services, but that NARDAC WASHINGTON is competing very favorably with alternative sources of ADP services in the area.

2. The strategic focus of NARDAC's top management is clearly a noteworthy organizational strength. Extraordinary efforts have been made to institutionalize the formal planning process in the organization, including semi-annual strategic planning meetings and the development of a long term strategic business plan. A target growth rate of 20% annually has been set for each directorate. Additionally, top management's Life Cycle Management orientation, and their recognition of the need for cultivation of potential future customers through innovative programs like LASER, suggests a "passion for excellence" not often observed in bureaucratic organizations.

3. The hiring of an experienced Director of Marketing is seen as a potential strength. The move reflects command concern for instilling the marketing concept throughout the organization's infrastructure, and a desire to ensure

that marketing resources are allocated commensurate with their increased importance to the organization's long term survival.

4. NARDAC WASHINGTON scores high marks in the area of advertising, public relations and image enhancement, but in only one small area of its business. OOTOA (Office Automation), despite its small size and current limited contribution towards revenue, has done more to enhance the NARDAC image than all of the other production directorates combined. These efforts have included the marketing of a new, upbeat identity--L.A.S.E.R., for Locally Accessible Shared Executive Resources--to appeal to the growing microcomputer and network markets. Participation in regional computer "tradeshow" type activities, direct advertising in government periodicals, and potential client "education" efforts such as the NARDAC WASHINGTON Guide, "An Overview of Office Automation," are additional activities spearheaded by OOTOA. The authors' opinion is that these efforts set a standard for excellence which other NAVDAC activities would do well to emulate. For purposes of assisting commanding officers who might be interested in pursuing a similar strategy, the "Guide" is duplicated in Appendix I.

D. MARKETING STRATEGY WEAKNESSES

Analysis of the systematic marketing audit conducted at NARDAC WASHINGTON revealed the following weaknesses in the organization's overall approach to marketing:

1. The most prominent deficiency in the NARDAC WASHINGTON marketing strategy is that *there is no* formal marketing strategy. The strategic planning process currently underway is intended to provide a framework for developing a marketing plan, wherein markets can be targeted and resources allocated in a manner consistent with organizational goals. However, no such plan currently exists.

2. The marketing arm of the organization, as represented by the office of OOTL, is not the dynamic organizational force it should be. The reasons for this are substantiated in the text of the systematic marketing audit and are summarized as follows:

   a. A lack of a sense of mission, purpose, and direction;

   b. Inexperienced personnel;

c. A tendency toward isolation from the production directorates; and

d. Insufficient status and influence of the marketing director in both the formal and informal organizational structure.

3. Insufficient control mechanisms are in place to monitor progress toward the achievement of command goals and marketing objectives.

4. No marketing information system is in place to help identify potential opportunities or developing trends in the market. Further, little effort has been made to automate the compilation of even simple statistics that are essential for managing the marketing functions of the organization.

5. Additional weaknesses of a lesser significance include:

a. Insufficient knowledge of customer needs, wants, desires, complaints, etc. due to inadequate market analysis;

b. Pricing structure too complex to be comprehensible even to NARDAC personnel, and not formatted in a way that customers can easily understand when billed;

c. Lack of coordination between production directorates and the marketing organization, Code OOTL; and

d. Lack of participation by production directorates in overall image enhancement activities.

IV. NARDAC SAN FRANCISCO MARKETING STRATEGY

A.   OVERVIEW

NARDAC SAN FRANCISCO is a relatively small regional data automation facility. It is physically located at the Naval Air Station, Alameda, California, and has two satellite facilities: NAVDAFs Lemoore and Moffett Field. The organization's total current operating budget is approximately 15 million dollars.

Presently, NARDAC SAN FRANCISCO is staffed by 284 civilian and military personnel. This manning level is augmented by four personnel who are contracted to provide mainframe hardware maintenance services. A graphical representation of NARDAC's personnel profile, for fiscal years 1984 through 1986, is shown in Figure 4.1. Figure 4.2 shows a chart of the organizational hierarchy of NARDAC SAN FRANCISCO.

B.   SYSTEMATIC MARKETING AUDIT RESULTS

The following comments summarize the results of the marketing audit conducted by the authors at NARDAC SAN FRANCISCO. The numbered remarks correspond directly to the questions listed in Appendix A. The Commanding Officer, Executive Officer, Client Liaison Officer (Code 09L), three production Directors (Codes 30, 40, and 50), and the Comptroller (Code 20) were among those interviewed. Where appropriate, individual opinions are identified for attribution; otherwise, the responses provided represent the authors' interpretation of the general perspective of the entire organization based upon all responses to the specific question under review.

1. PART I. The Marketing Environment

    a. Markets

      (1) Who are the organization's major markets?

        (a) As identified by top management.

Top managers identified as their primary markets Navy organizations within the San Francisco Bay area. With respect to micro-computer training and computer security training, the entire west coast of the United States was identified. Management believes that as commands strive to become more fully automated, demand for NARDAC's training services will increase.

        (b) As identified by marketing personnel.

MILITARY

59	60	59
1984	1985	1986

CIVILIAN

216		225
	207	
1984	1985	1986

CONTRACTOR

4	4	4
1984	1985	1986

TOTAL

279		288
	271	
1984	1985	1986
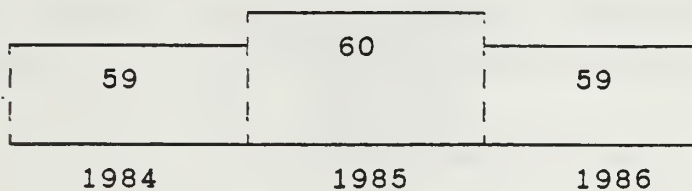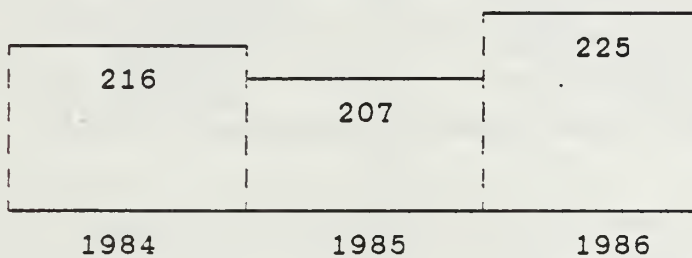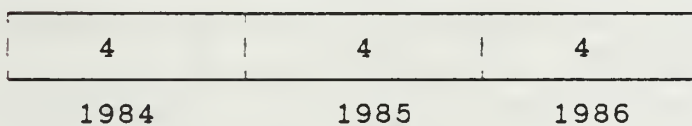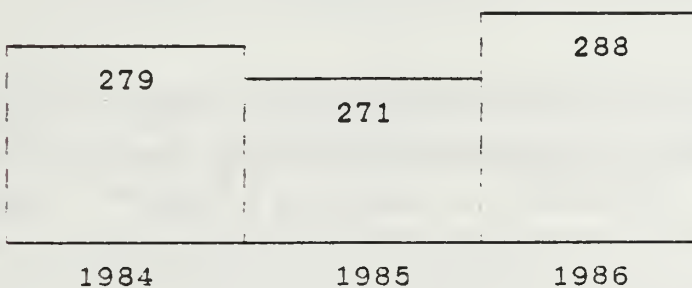
Figure 4.1 NARDAC SAN FRANCISCO Personnel Profile.

35
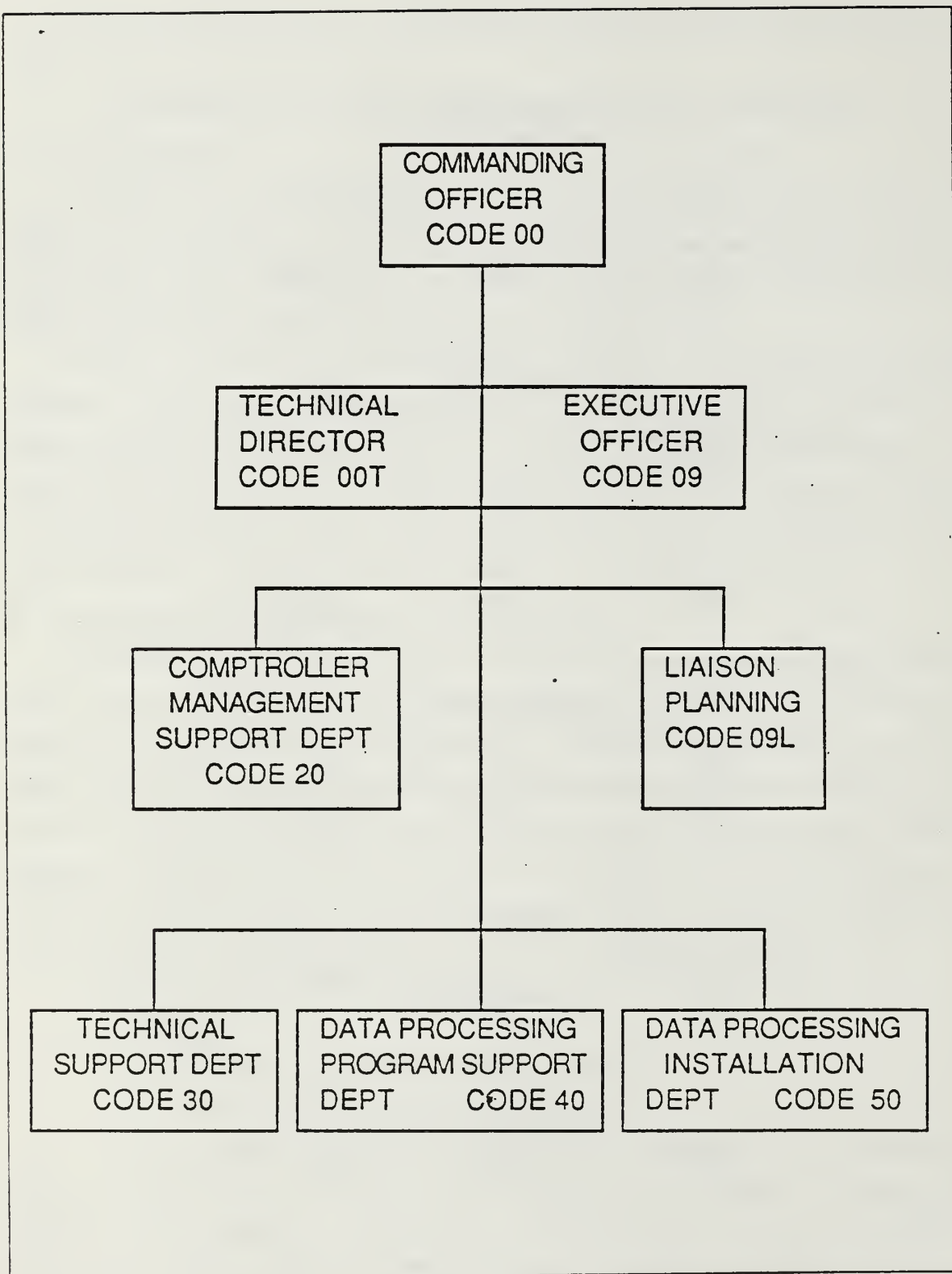
Figure 4.2   NARDAC SAN FRANCISCO Organizational Chart.

The Client Liaison Officer stated that the primary market for NARDAC SAN FRANCISCO was Navy commands in the Continental United States located west of Idaho, Utah, and Arizona. (PASTOR, 1986) The assistant Client Liaison Officer described NARDAC's markets as primarily Navy organizations within a fifty mile radius of NARDAC. (MACK, 1986) Micro-computer training appeared to be the primary focus of interest to the Client Liaison office.

(c) As identified by production department heads.

Department heads generally agreed that their marketing arena was the San Francisco Bay area for major ADP services. The area of computer security training was seen as encompassing the entire west coast of the United States. "We are charged by NAVDAC to provide computer security training classes . . . this class trains ADP officials for regional commands. . . ." (SMITH, J. E., 1986) Along with the security training available, NAVDAC has sponsored a limited number of security consulting hours, available to commands for "free." (SMITH, J. E., 1986)

(2) Are the markets/market segments expanding or declining?

The marketing segment related to mainframe services and software development is growing, according to Mr. Robert E. Taylor, NARDAC's Technical Director, but this growth is the result of expansion of current customer requirements. (1986) When asked about expanding their mainframe services to new customers, Captain Roth, NARDAC's Commanding Officer, stated, "Everybody believes that we should be out soliciting the big mainframe type jobs. I just don't believe they are out there. . . . I see (that market segment) in more of a hold status." (ROTH, 1986) The marketing segments identified as having the greatest potential for development and expansion is systems definition/requirements analysis, micro-computer training, and computer security training.

No declining market segments were identified by any of the interviewees. Formal market/market segment analysis is currently not being performed.

b. *Customers*

(1) Who are current and potential customers?

NARDAC SAN FRANCISCO currently has approximately 50 customers. Of these customers, five account for about 75 percent of total revenue. A breakdown of the revenue contribution of the five largest customers is shown in Figure 4.3

NARDAC SAN FRANCISCO's customer base is limited in that there has not been a great deal of software development requirements identified in the San

CUSTOMER	% TOTAL REVENUE
Naval Air Rework Facility (NARF), Alameda	46.6%
FAADCPAC, San Diego	9.2%
Naval Air Station, Alameda	8.3%
Naval Air Station, Lemoore	7.8%
Naval Air Station, Moffett Field	3.6%

Figure 4.3   NARDAC SAN FRANCISCO Major Customers.

Francisco area. (THOMPSON, 1986) Through micro-computer training, and the subsequent increase in micro-user requirements, the NARDAC SAN FRANCISCO position is that micro-user needs will facilitate business in the area of networking, mass storage, or data base requirements. Captain Roth stated, ". . . everybody's getting microcomputers, . . . everybody's trying to local area network, . . . everybody's trying to get themselves automated. To do this with any kind of competence and coherence, they need to analyze their requirements, and we can do that for them." (1986)

(2) Are current customers satisfied? Have steps been taken to measure customer satisfaction?

Results of a recent Inspector General (IG) inspection indicate that NARDAC's customers are satisfied. The IG conducted a pre-inspection user satisfaction survey and interviewed a representative sample of NARDAC customers as a follow-up. As a result of the inspection, the IG stated, "NARDAC SAN FRANCISCO's relations with their (sic) customers are among the best in the NAVDAC community." (1986)   The overall evaluation assigned to NARDAC SAN FRANCISCO in the area of customer relations was "commendatory." (IG, 1986)

Measuring client satisfaction is a function which is performed daily. The Technical Director calls every major client (Figure 4.3) each working day at 1500 to see if there are any problems. Additionally, a trouble desk is maintained to handle routine trouble calls from on-line users. Records of client contacts are not kept by the Technical Director or trouble desk personnel. Because no source of customer contact data could be found, the authors were unable to identify any effort to analyze customer satisfaction or perform trend analysis in this area.

NARDAC SAN FRANCISCO's fiscal year 1987 annual marketing plan calls for a client "Performance Evaluation Survey." The intended use of the survey is to consolidate client data ". . . into a database to build baseline criteria for improving the quality of all services provided. . . ." (MARKETING PLAN, 1985) This survey, if implemented, has the potential to improve management's understanding of the extent of client satisfaction.

(3) Who are the organization's major competitors, both within the government and in the private sector?

The General perception of all top management is that NARDAC experiences little or no competition from the private sector. Captain Roth said, ". . . we have fewer competitors than you might think." (1986) Key managers repeatedly stated that the private sector is not able to compete with NARDAC because of the low prices NARDAC can charge and the fact that NARDAC services can be obtained without the customer having to go through the lengthy procurement process which requires solicitation of at least three competitive bids. According to Captain Roth, competition from other government agencies, including other NARDACs, has been experienced to a limited extent. (1986) However, in recent cases when NARDAC's have found themselves in conflict with each other in a competitive bidding situation, NAVDAC has intervened to direct the potential new business toward the regional center that best satisfies the overall information needs of the Navy. (RANNELLS, 1986)

2. **PART II.** The Marketing System Review

a. *Objectives*

(1) Are the organization's long run and short run overall objectives and marketing objectives clearly stated? Are they consistent with NAVDAC policy and objectives?

"NARDAC has established eight major command goals to govern pursuit of expansion of our computer services and ADP product lines." (MARKETING PLAN, 1986, p. 5) These goals are clearly stated and reproduced in Appendix J. The marketing plan contains broad guidelines which address the general marketing philosophy of the organization and specific action items which serve as a checklist of activities for marketing personnel. However, the action items in the marketing plan are listed seperately from the command goals, and are not clearly tied to supporting any particular strategic goal. Thus, the rationale behind a specific action item may not be apparent to those tasked with the responsibility for accomplishing them.

Although the marketing plan states that command goals "... are implemented through specific objectives developed by the department directors, NAVDAF OICs, and staff assistants," the authors could find no evidence of any formalized statement of objectives at the production department level. (MARKETING PLAN, FY 87, p. 5) This suggests that formal, long term strategic planning involving all key managers is not an integral part of NARDAC SAN FRANCISCO's management routine.

The fiscal year 1987 marketing plan is consistent with the limited guidance contained in NAVDACINST 5230.7 on marketing strategy.

(2) & (3) Are the marketing objectives measurable? Are the marketing objectives reasonable given current resources and opportunities?

The marketing objectives are loosely defined throughout the marketing plan and are not identified as objectives per se. Performance metrics or standards are not visibly apparent. Therefore, a definitive statement about measurability cannot be made. In the judgement of the authors, everything that can be interpreted as an objective in the marketing plan, if implemented, would require the efforts of a marketing staff much larger than currently exists.

b. Program

(1) Does a core strategy exist to support the stated objectives? Is the strategy in writing? Is it likely to succeed?

A step by step strategy delineating action required, personnel responsible, and milestones for accomplishing marketing objectives is not spelled out in the marketing plan. The authors were unable to find any other documentation related to marketing or business strategy. If a core strategy exists, it has not been identified as such in the formal documentation of the command reviewed by the authors; therefore successful implementation of such a strategy will be difficult.

(2) Does the organization allocate enough resources to accomplish the marketing tasks?

Personnel assigned to 09L who have marketing functions as their primary responsibility include the following:

(a) Client Liaison Officer (Code 09L)--A military officer (O-3)

(b) Assistant Client Liaison Officer/Computer Specialist--A civilian GS-11

(c) Administrative Clerk--Enlisted military (E-5)

Code 09L does not have its own budget. Should funding become necessary, funds must be requested from the executive officer.

(3) Are marketing resources allocated by market/customer commensurate with potential revenue return?

The authors found no evidence that any formalized effort has been made to correlate a relationship between resource allocation and potential revenue return. However, in keeping with the Commanding Officer's stated philosophy of cultivating the potential of the microcomputer market, NARDAC SAN FRANCISCO has established a unique information resource center (IRC) which sets the standard among those observed for this study. The IRC provides formal classroom training and consulting services on a one-time or subscription basis to end users. It contains a modern display area which showcases various Navy-sponsored computer hardware and software. In the IRC, clients and potential clients can observe applications and new products in actual use. NARDAC SAN FRANCISCO's IRC is predominantly microcomputer oriented and is not considered to be a major direct contributor to the center's current revenue. However, when viewed strictly as a marketing tool aimed at helping Navy commands to deal with the microcomputer revolution and the "future shock" of office automation, the potential for future return would appear to be significant.

c. Implementation

(1) Does the organization develop an annual marketing plan?

A fiscal year 1985 marketing plan was published in compliance with a 1985 NAVDAC administrative requirement (NAVDACINST 5230.7). This plan was carried forward to fiscal year 1986, and a new fiscal year 1987 marketing plan has recently been published. NARDAC SAN FRANCISCO was the first NARDAC to put out a marketing plan (TAYLOR, 1986). It is the only NARDAC within the scope of this study that remains in strict compliance with NAVDACINST 5230.7. Nonetheless, the authors could find no evidence that the proposed actions of past marketing plans have been implemented or carefully monitored. For example, although the 1985 plan called for the collection of "performance evaluation surveys" from customers, an internal "marketing audit," and a "workload planning survey," these tasks were apparently not carried out. Although the fiscal year 1987 marketing plan contains a statement of the FY 87 command goals, it was not the result of a formal planning process involving key managers. Instead, it was developed as an independent project of the Client Liaison Officer. (PASTORE, 1986)

(2) Does the organization implement control procedures (monthly, quarterly, etc.) to insure that its annual plan objectives are being achieved?

When asked about control procedures, the Director, Data Processing Programming Support department (Code 30), said that "We meet on a monthly basis for what's called the Marketing Executive Board to review what we're doing. It's primarily financially oriented rather than client oriented." (THOMPSON, 1986) The fiscal year 1985 marketing plan called for a detailed review of the financial plan at these monthly meetings. It also required the publishing of monthly variance reports, the construction of resource pool effectiveness charts, a formal strategic evaluation for each resource pool, monthly market trend analysis reports, and the development of specific marketing taskings by the executive board. (1985) With the exception of the comptroller's variance report, the authors were not made aware of any effort to actually implement these ambitious control procedures. Possibly in recognition of this inconsistency, the fiscal year 1987 marketing plan completely eliminated the formal "control and review process" contained in the FY 85 plan. Thus, formal, documented control procedures to monitor the achievement of annual plan objectives are lacking.

(3) Does a mechanism exist (e.g. marketing information system, market planning meetings) to enable key managers to identify potential new markets or customers, or match idle capacity to customer needs?

The Monthly Marketing Executive Board provides an opportunity for managers to identify potential new markets or customers, and discuss the matching of idle capacity to customer needs. In addition, information can potentially be generated from the 09L database which would serve to identify trends.

(4) Are services provided to customers "equipment" oriented or "solution" oriented?

"Definitely solution oriented . . . ," according to NARDAC's Technical Director. "The solution may not even be a computer. We do a systems analysis to establish what the customer need is." (TAYLOR, 1986) Of course, if the task is deemed to require a solution by computer, the likely implementation would be with NARDAC's existing resources. In this regard, all potential solutions are "equipment oriented." The analysis contained in Chapter III, section B, PART II, paragraph c.4, which discusses the difficulty in providing flexible solutions when constrained by specific hardware, is germane.

(5) Has any effort been directed toward automating certain marketing activities with existing computer resources?

The Client Liaison Office maintains records on each project being worked on at the NARDAC. Hardcopy files are maintained as well as an automated customer database. This database is used to provide statistics for the "Revised Planning Estimate Report," and to maintain data relevant to the "Project Request Tracking System." (MACK, 1986) The Revised Planning Estimate is a program which uses individual customer chargeback reports as input data to calculate system usage by customer. The Project Request Tracking system is a routing control system which is used to track incoming project requests and all subsequent events related to that particular project. These automated systems are implemented on microcomputers in the Client Liaison Office. Together they represent the most well developed effort to automate marketing activities observed in this study.

d. Organization

(1) Does the commanding officer believe in marketing planning and is formal planning ingrained with all top managers?

To the extent that NARDAC SAN FRANCISCO is the only NARDAC within the scope of this study to have strictly observed the requirement to publish an annual marketing plan, the Commanding Officer is concerned about marketing planning. However, compliance with NAVDACINST 5230.7 (Marketing Strategy) does not strictly require a formal planning process involving all top managers. Formulating strategy of this nature in the context of a long term business plan is not a current objective of the command. The Commanding Officer stated his agreement with the Coopers & Lybrand (1986) conclusion that NAVDAC should bear the responsibility for developing a long range plan for the NARDACs which explicitly defines operational objectives, customer development objectives, and business growth policy. (ROTH, 1986)

(2) Are all marketing functions under the direction of one executive who reports to the commanding officer?

Responsibility for all formal marketing functions rests with the Client Liaison Officer, Code 09L, who does not report directly to the Commanding Officer. The formal reporting structure requires Code 09L to report to both the Executive Officer and the Technical Director. (See Figure 4.2.) However, the Client Liaison officer may informally report directly to the Commanding Officer as circumstances may require. (ROTH, 1986)

(3) Is she (the marketing executive) qualified by experience/educational background to act as the marketing director of a major ADP organization?

The Navy Lieutenant currently filling the position of Client Liaison Officer has no prior experience or educational background in either marketing or ADP. The computer specialist who acts as the assistant Client Liaison Officer has no marketing background, but is experienced in ADP. She primarily acts as an administrative assistant to the Client Liaison Officer.

(4) Does she have an adequate supporting staff?

The Client Liaison Officer freely acknowledges that she does not have an adequate staff to perform the organization's marketing functions. (PASTOR, 1986) All top management generally agreed that the 09L staff did not possess the requisite background to adequately support a marketing effort. The authors observed that NARDAC SAN FRANCISCO devoted far fewer personnel resources to marketing than either NARDAC SAN DIEGO or NARDAC WASHINGTON, D.C.

(5) Do other key people in the organization understand and practice the marketing concept?

In general, it can be inferred from discussions with the department heads that they understand the concept of marketing. They each stated in various ways that marketing should be accomplished, in the context of good business practices, from within each department, due to the diversity of technical expertise required. From this perspective, department heads do practice the marketing concept. However, an aggressive, coordinated approach to marketing involving all the department heads and the marketing staff was not in evidence.

3. **PART III. Detailed Marketing Activity Review**

   a. *Products/Services*

   (1) What are the main products/services supplied by NARDAC?

The main products and services provided by NARDAC SAN FRANCISCO to customers include:

(a) Services composed of mainframe and minicomputer data processing, and specialized peripheral equipment support.

(b) Data processing programming support capabilities such as requirements analysis and design, and software engineering and development.

(c) Technical support in the areas of standards and procedures development, systems software support, data base management, and teleprocessing.

(d) Training in the areas of ADP security, microcomputer use, and microcomputer software utilization.
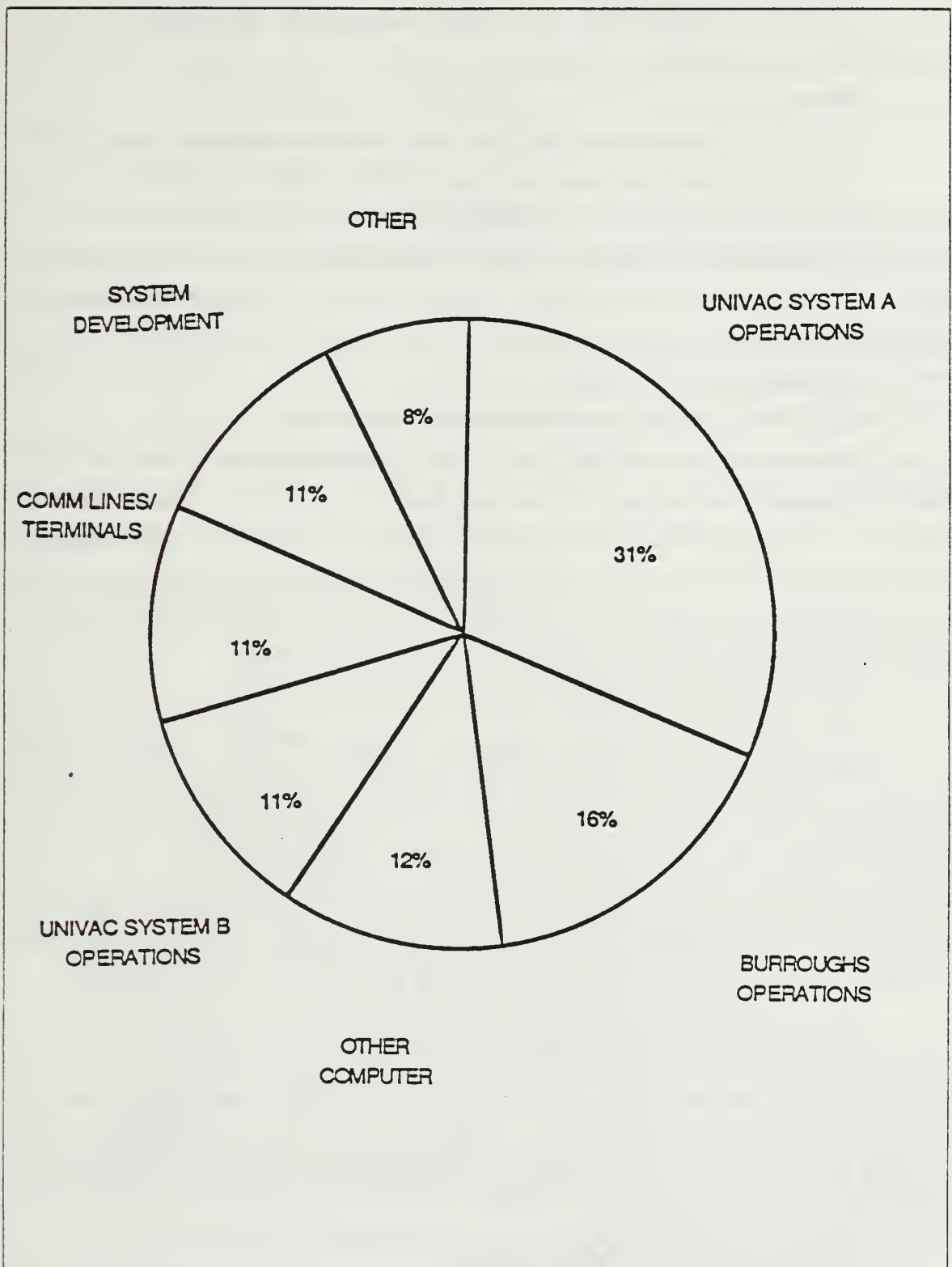
Figure 4.4 NARDAC SAN FRANCISCO Revenue Components.

Figure 4.4 breaks out the major components of NARDAC SAN FRANCISCO's revenue by type of resource.

b. Price

(1) To what extent are prices set on cost, demand, or competitive criteria?

Cost determinants are used to set price levels. The fiscal goal is to break even over a three year period. The Comptroller stated, "The prices are set to recover our costs; we operate in a breakeven mode. So to the extent that we can accurately estimate our costs we set our local rates, through NAVDAC, to recover those costs." (OVERSHOUN, 1986) Chapter III, PART III, paragraph B.1. provides a description of how prices are set for all NARDACs.

(2) Do key personnel understand how prices are set?

Because of the complexity surrounding the chargeback system and the methods for determining average costs per unit used, (i.e. CPU costs, labor costs, or development costs) only the upper echelons of the organization and those directly involved in setting cost/price policy understand how prices are set. Since prices are set based upon actual costs incurred, the Comptroller (Code 20) and his staff are the best sources of information on how prices are set. (OVERSHOUN, 1986)

(3) How do customers psychologically interpret price level?

According to the Technical Director, "There is a tendency to think it's too high . . . . When we charge twenty-nine dollars an hour for a programmer it's hard for them (the customer) to understand what's in that twenty-nine dollars." (TAYLOR, 1986) This opinion was validated in an independent study, which stated ". . . Most customers are unaware of how NARDAC's calculate overhead or set rates, but they believe they are being charged high rates to support the NARDACs' high personnel overhead and underutilized equipment." (COOPERS & LYBRAND, 1986, p. GM-8)

(4) Would lowering/raising prices affect demand?

NARDAC SAN FRANCISCO's Technical Director, stated that lowering prices might tend to increase demand. (TAYLOR, 1986) However, the pricing structure as viewed by the customer is sufficiently complex that a small price reduction could conceivably go unnoticed. Formal analysis to determine the actual price elasticity of demand has not been accomplished.

c. Advertising/Publicity/Public Relations

(1) Are measures taken to enhance/promote the NARDAC image?

Newsletters are mailed out to past and present Information Resource Center (IRC) clients. These newsletters promote new products or services offered by the IRC. Additionally, pamphlets are distributed to potential customers who visit the IRC, or who request information about NARDAC services.

(2) Is advertising/image enhancement budgeted for?

There is no specific budget for advertising or image enhancement. However, funds may be available (on a case by case basis) from the Executive Officer, for specific advertising.

(3) Do the themes, logo, and copy employed in advertising and public relations efforts add to or conflict with the desired image of the organization?

The new themes and logo developed by NARDAC SAN FRANCISCO's Client Liaison Officer, are consistent with NARDAC's desired image. The stated goal for developing the new organizational logo is, ". . . to provide a more professional, corporate marketing image . . . ." (MARKETING PLAN, FY 87)

C. MARKETING STRATEGY STRENGTHS

Analysis of the systematic marketing audit conducted at NARDAC SAN FRANCISCO revealed the following obvious strengths in the organization's overall approach to marketing:

1. NARDAC SAN FRANCISCO has established the most impressive and professional looking Information Resource Center (IRC) of the three NARDACs reviewed in this study. This IRC evolved out of a strong desire by the Commanding Officer to cultivate potential new markets for office automation and local area networking. San Francisco's Information Resource Center sets a professional standard for the NARDAC community and promotes an image of competence that is a valuable marketing tool.

2. Although a full-blown, automated marketing information system does not exist at any of the regional centers reviewed in this study, the NARDAC SAN FRANCISCO marketing staff has implemented an automated customer database for use on microcomputers. This effort has given the marketing staff the capability to extract routine administrative data on NARDAC customers, as well as pertinent information on the types and costs of products and services being provided. This information could be used to perform trend analysis on market segment demand, and assist management in the task of matching

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NARDAC resources to client needs. Although this system was not the result of an extensive systems analysis and design process aimed specifically at automating the organization's marketing activities, it does perform a useful marketing function--i.e. access to a customer data base. The other NARDACs examined in this study were observed to have a lesser capability to perform such routine tasks automatically.

3. Since NARDAC SAN FRANCISCO's relations with its customers are ". . . among the best in the NAVDAC community," (IG, 1986) it can be concluded that the close personal contact maintained between high level technical managers at NARDAC SAN.FRANCISCO and its clients is a proven formula for success.

4. While not perfect, the FY 87 marketing plan published by NARDAC SAN FRANCISCO was an improvement over the FY 85 plan and provides a potentially useful framework for coordinating the organizations marketing efforts.

5. The efforts made to enhance the organization's image through development of logos and copy targeted toward specific market segments are noteworthy.

D. MARKETING STRATEGY WEAKNESSES

Analysis of the systematic marketing audit conducted at NARDAC SAN FRANCISCO revealed the following weaknesses in the organization's overall approach to marketing:

1. The lack of a long range plan for conducting operations stands out as a prominent weakness in NARDAC SAN FRANCISCO's marketing effort. Key managers, including the Commanding Officer, stated their belief that the guidance for such a plan should first be developed at the NAVDAC level, so that NARDAC regional goals and objectives could be established within the framework of a community-wide strategy. This argument has merit. However, in the absence of such direction, accepting the status quo is seen as a less desireable alternative than initiating the development of a strategic plan at the NARDAC level. In the context of Mintzberg's three modes of strategy making--entrepreneurial, adaptive, and planning--accepting the status quo at the NARDACs is viewed as an "adaptive" approach. "The adaptive organization moves ahead timidly in a series of small, disjointed steps. . . .

Caught in a web of conflicting forces, management cannot always negotiate a clear statement of objectives. Hence the reactive, fragmented, disjointed strategy-making that, oddly enough, adds an element of flexibility--one that accounts largely for the organization's ability to muddle through." (STONER, 1978, p. 106) However, organizations in the planning mode follow a more systematic procedure which "requires them to analyze the environment and the organization so they can develop a plan to move into the future." (STONER, 1978, p. 107) Common sense would lead one to conclude that organizations that use formal strategic planning are more successful than those that do not. This conclusion has been validated by Thune, House, and others in formal studies of large companies in private industry. (THUNE, 1970, p. 83)

2. Action items in the marketing plan are not tied to command goals. Although the command goals are specified in the marketing plan, there is not an obvious and direct link between marketing action items and command goals.

3. Marketing objectives implied in the marketing plan are loosely defined. Although the marketing plan places the burden on the department heads to develop specific marketing objectives from the command goals, a means of verifying departmental compliance is not present in this requirement. The authors were unable to verify the existence of any *specific* marketing objectives. This lack of specificity makes the formulation of a plan to meet the marketing objectives extremely difficult. Stoner argues that objectives ". . . enable us to reach goals that would otherwise be much more difficult or even impossible to reach." (1978, p. 9) The objectives must be formally established in order to provide management a framework within which to monitor their achievement.

4. NARDAC SAN FRANCISCO's geographic location with respect to potential major clients provides it with a relatively small customer market as compared to either NARDAC SAN DIEGO or NARDAC WASHINGTON D.C. The absence of major commands requiring substantial ADP support in the region is seen by the authors as a distinct disadvantage. An aggressive marketing posture might possibly serve to overcome this disadvantage.

5. As a client of NARDAC SAN FRANCISCO, the Naval Air Rework Facility (NARF), Alameda accounts for almost fifty percent of NARDAC's business. This puts a single customer in a position to exert significant influence over NARDAC operations. The authors could find no evidence that the NARF has

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chosen to take advantage of their powerful market position. However, should customer relations deteriorate for any reason, NARDAC could find itself at the mercy of NARF for its economic survival.

6. The Client Liaison Office is not staffed with personnel who have a marketing background. This weakness is recognized by NARDAC SAN FRANCISCO's Commanding Officer who stated, "There should be some provision for us to be able to have a marketing competence other than by luck of the draw. Either a civilian director or a P-coded billet would be a significant improvement." (ROTH, 1986)

V. NARDAC SAN DIEGO MARKETING STRATEGY

A. OVERVIEW

NARDAC SAN DIEGO is located at Naval Air Station, North Island, in close physical proximity to its largest client, the Naval Air Rework Facility (NARF) at North Island. In a very broad sense, NARDAC SAN DIEGO can be considered to be "typical" in that it ranks fourth out of seven NARDACs in terms of annual revenue ($19.4M in 1986), and fourth out of seven in terms of work force size (330 military and civilian). The command, whose organizational chart and personnel profile is depicted in Figures 5.1 and 5.2, is scheduled to relocate into a modern, 15.7 million dollar computer center in June 1987. This will be the first data processing center designed for the Navy since 1972.

B. SYSTEMATIC MARKETING AUDIT RESULTS

The following comments summarize the results of the marketing audit conducted by the authors at NARDAC SAN DIEGO. The numbered remarks correspond directly to the questions listed in Appendix A. The Commanding Officer, Executive Officer, Marketing Director (Code 09L), two Production Directors (Codes 30 and 40), and a production Division head (Code 53) were among those interviewed. Where appropriate, individual opinions are identified for attribution; otherwise, the responses provided represent the authors' interpretation of the general perspective of the entire organization based upon all responses to the specific question under review.

1. PART I. The Marketing Environment

a. Markets

(1) Who/what are the organization's major markets:

(a) As identified by top management. NARDAC executives identified the larger Navy commands in their geographic region as the primary marketing targets. The types of product and service focused on these clients and potential clients run the gamut from one-time technical consultations to full responsibility for processing applications on a scheduled production basis. Data processing installation (DPI) support services such as time sharing or processing of information systems (IS), and technical support services in the areas of systems software, teleprocessing, systems design and related activities are the major ADP functions performed by NARDAC SAN DIEGO for its customers.

MILITARY

38	45	49
1984	1985	1986

CIVILIAN

281	290	292
1984	1985	1986

CONTRACTOR

NO SIGNIFICANT SUPPORT

| 1984 | 1985 | 1986 |

TOTAL

319	335	341
1984	1985	1986
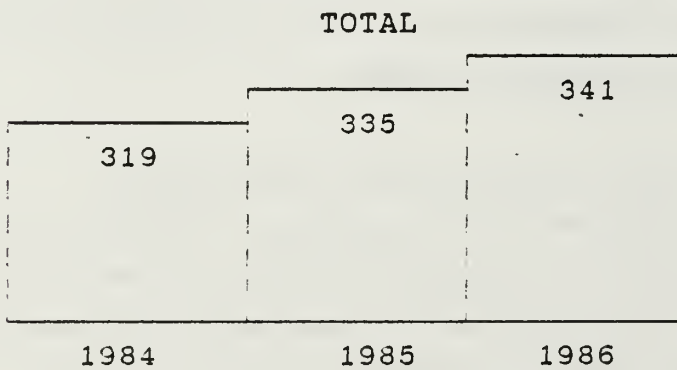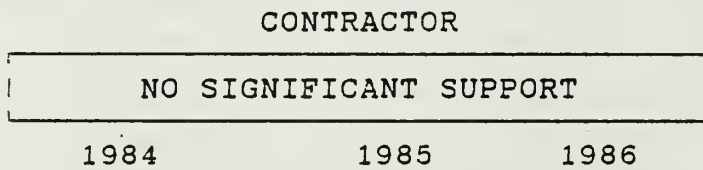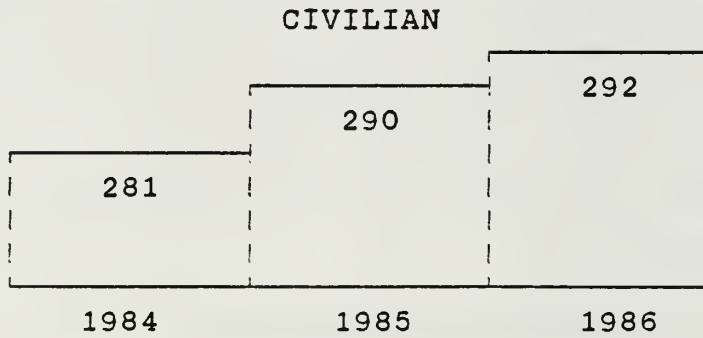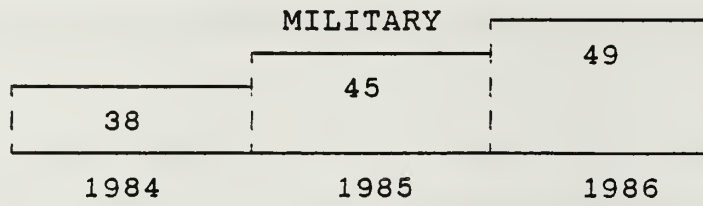
Figure 5.1   NARDAC SAN DIEGO Personnel Profile.

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                    ┌──────────────────┐
                    │   COMMANDING     │
                    │    OFFICER       │
                    │    CODE 00       │────────────┐
                    └──────────────────┘            │
                             │              ┌──────────────────┐
                             │              │    COMMAND       │
                             │              │ MASTER CHIEF     │
                             │              │   CODE 09M       │
                             │              └──────────────────┘
            ┌────────────────┼────────────────┐
    ┌──────────────┐         │         ┌──────────────┐
    │  EXECUTIVE   │         │         │  TECHNICAL   │
    │   OFFICER    │         │         │  DIRECTOR    │
    │   CODE 09    │         │         │  CODE 00T    │
    └──────────────┘         │         └──────────────┘
                             │
    ┌──────────┬─────────────┼─────────────┬────────────────┐
┌──────────────┐    ┌──────────────┐    ┌────────────────────┐
│   LIAISON    │    │  TECHNICAL   │    │  DATA PROCESSING   │
│PLANNING DEPT │    │ SUPPORT DEPT │    │ INSTALLATION DEPT  │
│  CODE 09L    │    │   CODE 30    │    │     CODE 50        │
└──────────────┘    └──────────────┘    └────────────────────┘
                           │                      │
                    ┌──────────────┐    ┌────────────────────┐
                    │ MANAGEMENT   │    │  DP PROGRAMMING    │
                    │ SUPPORT DEPT │    │   SUPPORT DEPT     │
                    │   CODE 20    │    │     CODE 40        │
                    └──────────────┘    └────────────────────┘
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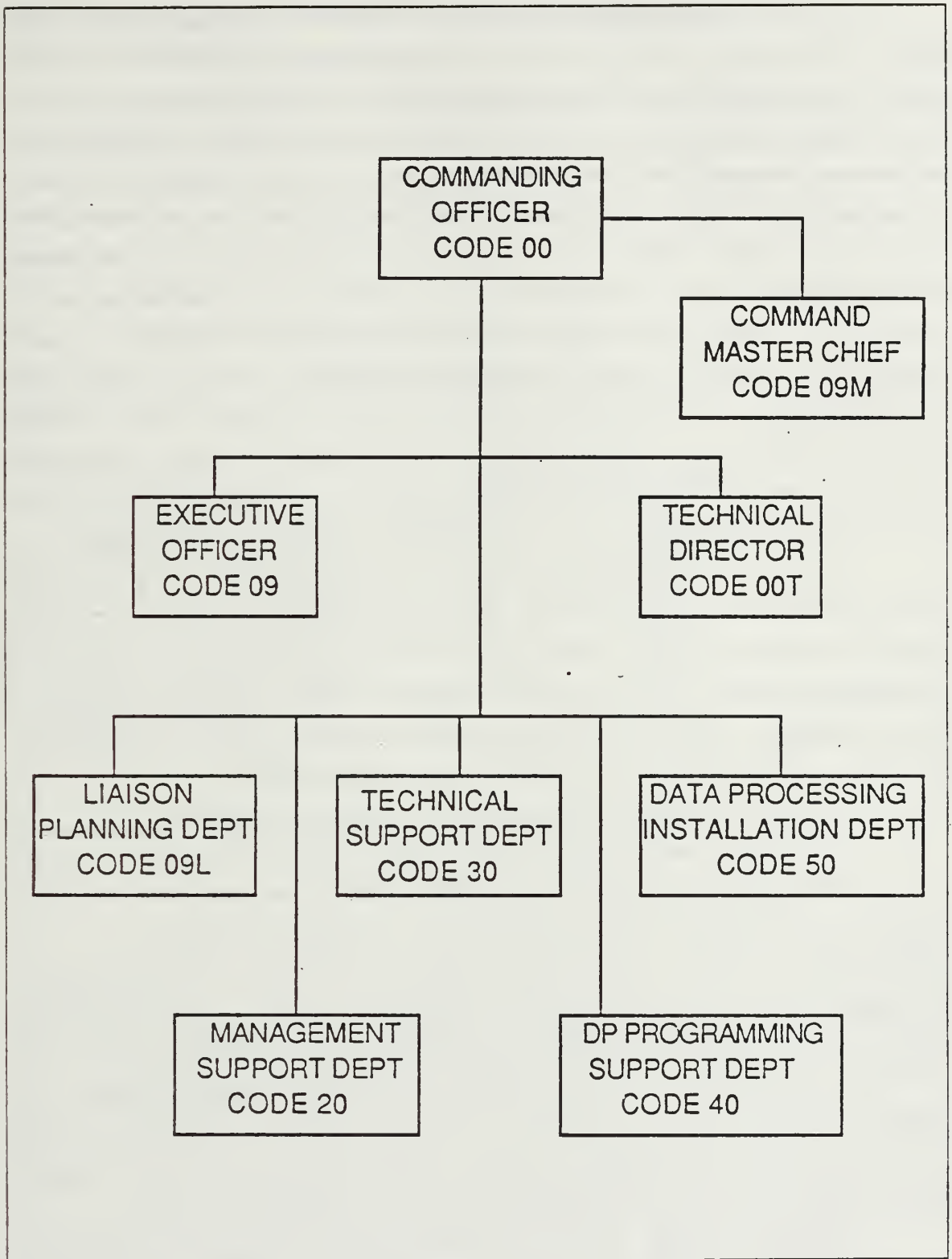
Figure 5.2   NARDAC SAN DIEGO Organizational Chart.

(b) As identified by marketing personnel. Marketing personnel have geared their activities toward nurturing the relationships which exist between NARDAC SAN DIEGO and its existing clients, and less on efforts directed toward the cultivation and expansion of the NARDAC's client base. This reflects an approach by the marketing director (Client Liaison Officer, Code 09L) to direct marketing resources and energy toward those clients whose history supports the greatest potential for revenue return, namely, NARF North Island and other large clients, primarily in the area of mainframe support and technical services. Another reason for this approach is the fact that ". . . at this time, there is too much disagreement (among key managers) about whether or not we should be seeking new business and about what direction we should be taking. . . ." (MCMAHON, 1986) The marketing director cannot proceed confidently in the direction of generating new business since it is unclear to her whether or not new client development is a desirable organizational objective. Thus, she has focused her informal marketing strategy on nurturing existing client relationships.

(c) As identified by production department heads. By and large production directors/department heads maintain an orientation towards marketing products in their own specific areas of responsibility. The following services were specifically mentioned as falling into the category of "major" markets: configuration design, acquisition support, telecommunications support, large scale mainframe applications, and smaller scale applications programming support.

(2) Are the markets/market segments expanding or declining?

Telecommunications support and teleprocessing are the market segments currently showing the greatest rate of growth. This growth is being fueled by NARDAC SAN DIEGO's heavy involvement in installing, bringing on-line and operating the Navy's newest information systems, such as IDAFMS (Integration of Disbursing and Accounting Financial Management System), STAFS (Standard Automated Financial System), BASIS (Bases and Stations Information System), and many others. Additionally, increased demand for office automation impacts on configuration design and telecommunications. A logical follow-on would then be Local Area Network (LAN) development, which NARDAC's Code 30 sees as a lucrative source of future activity for his systems programmers. (JOHNSTON, 1986)

Finally, expansion of virtually all market areas is expected to result from a recent SECNAV directive which reemphasizes policy regarding use of existing resources and specifically requires DON activities to ". . . include the regional NARDAC or

NAVDAF as one of the resources to be considered (for providing ADP support). . . ."
(SECNAV NOTICE 5231, 1 July 1986)

Seen as a declining market segment is applications programming, primarily due to its high labor intensity and associated lower contribution margins. Other factors seen as adversely affecting expansion of this market segment are the recently issued directives on "Managing to Payroll," a development which is elaborated upon in Chapter VI.

b. Customers

(1) Who are current and potential customers?

CUSTOMERS	% TOTAL REVENUE
Naval Air Rework Facility, North Island	38%
FAADCPAC, San Diego	15%
Naval Air Station, North Island	10%
NAVDAC Washington, D.C.	10%
Naval Air Station, Miramar	8%
COMNAVAIRPAC	3%
COMNAVSURFPAC	3%

Figure 5.3   NARDAC SAN DIEGO Major Customers.

NARF North Island accounted for 38% of NARDAC SAN DIEGO revenue in 1986, more than two and one half times that of its next biggest customer. Other large customers and their contribution to overall revenue are shown in Figure 5.3. According to Commander Dave Rannells, NARDAC SAN DIEGO executive officer, the command does not anticipate expanding its customer base much beyond that which currently exists. However, business with many existing clients is expected to grow. (1986) Additionally, although the anticipated fallout from SECNAVNOTICE 5231 is yet to be fully evaluated, it seems likely that the directive will result in a new flow of clients to regional NARDACS as long as the demand for data processing continues to be strong.

(2) Are current customers satisfied? Have steps been taken to measure customer satisfaction?

The evidence indicates that NARDAC SAN DIEGO has a reasonably accurate picture of the degree to which its customers are satisfied, and management has a very clear picture of the areas which the command needs to strengthen in order to improve customer satisfaction. This is because NARDAC SAN DIEGO is the only NARDAC the authors found to have engaged in a systematic review of its customer satisfaction level in the context of a formal market analysis.

In October 1985, the Commanding Officer directed the formation of a Marketing Task Group to develop data collection procedures, collect data, and perform analysis which would lead to the development of an effective marketing strategy for the command. The final report of the marketing task group was a comprehensive review of NARDAC SAN DIEGO's internal and external environments. It provided valuable insight to the command from two critical perspectives; namely, that of the NARDAC work force, and that of the NARDAC customer. For example, contained in the "internal analysis" section of the report is a prioritized listing of products and services on which NARDAC personnel indicated the command should concentrate. The "external analysis" section of the report contains detailed information on those areas which NARDAC customers identified as their primary ADP needs. The integration of these pieces of information could serve to identify whether or not the organization's resources and energies are being directed at the market/market segments which have the greatest potential for customer acceptance and growth.

The marketing task group's final report was a pertinent and useful document that stressed frankly and explicitly that

> . . . We should continue to interview NARDAC SAN DIEGO customers. . . . We must identify our strengths and weaknesses. We must match our strengths to our customers needs. We must strengthen our weaknesses. We must focus on key issues and, in general, we must position ourselves to be able to produce a line of products and services that will best serve the fleet, the Navy and NARDAC SAN DIEGO. (MARKETING TASK GROUP FINAL REPORT, October 1985)

However, although the report served as the basis for the development of a prototype marketing information system, the authors could find no evidence of any ongoing follow-up to the work begun by the marketing task group in the area of market analysis. Good customer relations exist, largely due to the strong command emphasis

on customer services embodied in the monthly client support meetings and the ongoing efforts of the marketing department field representatives. Nonetheless, the authors could not find any evidence that the information generated by these efforts is being formally integrated and analyzed for the purpose of developing strategic, operational or marketing plans.

(3) Who are the organization's major competitors, both within the government and in the private sector?

NARDAC SAN DIEGO's major competitors are ". . . the customers themselves." (RANNELLS, 1986) For a variety of reasons, many commands that use NARDAC for ADP services would prefer to have their own "in-house" ADP capability. That preference notwithstanding, few have made the effort to justify such a request. Possible reasons for this are:

(a) The administrative burden of participating in the ADP procurement process; and

(b) The relative competitive position of the NARDACs makes it difficult for a customer to justify a request for development of an in-house system on a strict cost basis.

2. **PART II. The Marketing System Review**

   a. Objectives

(1) Are the organization's long run and short run overall objectives and marketing objectives clearly stated? Are they consistent with NAVDAC policy and objectives?

A list of the FY85/86 command goals is contained in a formal command briefing and in NARDAC SAN DIEGO Instruction 5400.3; these are repeated in Appendix K. Additionally, the command is in the process of formalizing the results of its second annual strategic planning conference, during which the Commanding Officer, Executive Officer, Technical Director, Code 09L, and all directors developed the command's long term strategic objectives. As of this writing, these objectives and a plan for implementation had not been published. The stated intention of the command is to incorporate the new goals and objectives in an upcoming revision to NARDACINST 5400.3. (RANNELLS, 1986)

Until December 1986, NARDAC SAN DIEGO had not published a formal marketing plan, and the authors were not made aware of any official document which specified the command's marketing objectives. In response to a November 1986 message from NAVDAC directing compliance with NAVDACINST 5230.7, NARDAC

SAN DIEGO published a two page marketing plan for fiscal year 1987. This plan reflects a strategy geared toward nurturing relationships with current clients, while exercising a policy of restraint with regard to aggressive pursuit of new business. For example, one (of the four) objectives in the marketing plan is to meet the Navy's Information Resource Management needs "within manage to payroll, machine capacity and funding constraints." (NARDAC SAN DIEGO, 24 December 1986) More than anything else, the plan appears to emphasize the marketing of services which will help NARDAC SAN DIEGO improve the internal efficiency of its operations.

(2) Are the marketing objectives measurable?

In addition to the objective mentioned above, the marketing plan lists the following overall objectives:

(a) "To strengthen rapport with current (major) clients.

(b) To demonstrate our commitment to provide quality services to current and potential clients.

(c) To maintain our current level of business (workload) in most areas and to selectively increase workload in other areas." (NARDAC SAN DIEGO, 24 December 1986)

These objectives are vague and not readily measurable. Although nine action items accompany the marketing plan which are somewhat more specific than the above and have some measurable aspects, they are not adequately detailed nor specific enough to provide a useful tool for management control. No milestones for accomplishment are included. Responsible action personnel are not identified. Specificity is lacking.

(3) Are the marketing objectives reasonable given current resources and opportunities?

Given the general nature of the stated marketing objectives, current NARDAC SAN DIEGO resources and opportunities are considered adequate to support the plan. Indeed, one of the stated objectives of the plan, as previously indicated, is to remain within the constraints of existing resources.

b. Program

(1) Does a core strategy exist to support the stated objectives? Is the strategy in writing? Is it likely to succeed?

Key managers all expressed a consistent sense of purpose with respect to the command's overall strategy. Each is instrumental in formulating that strategy at the annual strategic planning conferences. However, the conferences have so far not produced an official written document which is designed to set the course of the

organization for any specified time period. As a result, the opinion of the authors is that it lacks the specificity required for adequate control, and is therefore unlikely to succeed.

(2) Does the organization allocate enough resources to accomplish the marketing tasks?

Relative to the other NARDACs examined in this study, NARDAC SAN DIEGO has demonstrated the greatest willingness to concentrate resources toward the accomplishment of marketing tasks. The marketing director (Code 09L) is a Navy 0-4 with an educational and experiential background in organizational effectiveness. She has two civilian GS-12 "client relations representatives" doing field work and market research full-time, and the part-time services of the command master chief for performing military-specific marketing tasks. She also has a full-time secretary and a $48K departmental budget which is used for administrative, travel, training and limited promotional activities.

Of greater significance than the size and quality of the permanent marketing staff, however, is the demonstrated propensity of the command to augment the existing marketing work force when the situation warrants. A striking example of this was the 1985 formation of the marketing task group, an ad hoc committee made up of key personnel from each directorate, whose comprehensive final report (referenced above) formed the basis for all subsequent marketing activity in the command.

A more recent example of a similar augmentation evolved from the need for NARDAC SAN DIEGO to respond to a request for bid on a major ADP project for the Pacific Missile Test Center (PMTC). This request represented one of the first cases for NARDAC SAN DIEGO in which a potential new client was partially generated out of compliance with SECNAVNOTICE 5231. Augmented by technical experts from each directorate, the marketing director was tasked with coordinating all aspects of submitting the NARDAC SAN DIEGO bid for the project.

According to LCDR McMahon, future requests for bids are expected to be handled in a similar manner. This tends to suggest an aggressive command policy geared towards devoting whatever additional resources may be required to accomplish emergent marketing tasks. The initiative also has served to "operationalize" the focus of Code 09L, giving that office increased status in the organization; it has promoted a

view of the marketing staff as members of the NARDAC team.[4]

(3) Are marketing resources allocated by market/customer commensurate with potential revenue return?

The authors were not made aware of any overt effort by marketing personnel to identify and categorize clients in terms of their potential contribution to revenue. However, the clients who generate the most revenue, by virtue of their larger size, receive relatively more attention in terms of scheduled visits by NARDAC's customer relations representatives, increased exposure at quarterly ADP advisory board meetings, and other less visible marketing efforts.

c. Implementation

(1) Does the organization develop an annual marketing plan? Is the planning procedure effective?

The reader is referred to PART II, paragraphs a.1, and a.2 of this audit for the authors' observations on NARDAC SAN DIEGO's annual marketing plan and the effectiveness of the planning procedures used.

(2) Does the organization implement control procedures (monthly, quarterly, etc.) to insure that its annual plan objectives are being achieved?

According to one department head, "There are controls in place, but they are not directly tied to meeting objectives. . . ." (MCMAHON, 1986) Another stated that ". . . when we return (from the planning conferences), we do things, but we don't do them in much of a hurry." (JOHNSTON, 1986) Regular meetings and briefings are held, and the general feeling of the department heads is that ". . . they are working towards goals, but they are not viewed with the sense of urgency a 'milestone' might imply." (RANNELLS, 1986) The implication from the consensus of managers was that control mechanisms exist, but that they have not been formally implemented. Finally, the issue of control procedures is simply not addressed in the command's December 1986 marketing plan.

(3) Does a mechanism exist (e.g. marketing information system, market planning meetings) to enable key managers to identify potential new markets or customers, or match idle capacity to customer needs?

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[4]It is of interest to note, however, that despite this zealous effort to integrate the marketing team into the command's operational activities, no mention of a plan to continue such active involvement is made in the command's recently published (December 1986) marketing plan.

The most prominent mechanism that exists to facilitate these tasks is the quarterly ADP Advisory Board, which brings top management and key production managers into direct contact with major clients on a recurring basis. These meetings, initially conceived as a forum for clients to air common grievances, have evolved into productive, interactive sessions which often identify the emergent ADP needs of present clients. Additionally, NARDAC has used the meeting to "feel out" clients on possible new approaches to solving their problems.

Another such mechanism for identifying potential new markets and customers is the previously referenced customer survey performed by the marketing task group in October 1985. Since that time, however, no follow-up surveys have been performed.

Finally, although the impact of SECNAVNOTICE 5231 is still unknown, the policy stated therein could be viewed as yet another passive mechanism for helping to identify new markets and customers.

(4) Are services provided to customers "equipment" oriented or "solution" oriented?

NARDAC SAN DIEGO makes every effort to find a solution to a customer's ADP problem by using, if at all possible, the equipment it has available. At first blush, such a policy can be construed to imply an emphasis on achieving economies of scale and efficiency of operations at the "expense" of providing the "best" solution for the customer's problem. However, the case can be made that ". . . our big interest should be the cheapest, most economical way for the Navy (to solve the problem). . . For example, our proposed solution to the PMTC problem involved teleprocessing, i.e., bringing that job form Pt. Mugu down to here (North Island) via phone lines, versus putting another computer up there that may operate at only 50% capacity for two-thirds of the day. We see our solution as a savings of S7 million for the Navy, even though it may not be the "preferred" solution from the customer's point of view." (RANNELLS, 1986)

(5) Has any effort been directed toward automating certain marketing activities with existing computer resources?

NARDAC SAN DIEGO developed a design for an automated marketing information system and implemented a prototype based on data collected by the 1985 marketing task group. Documentation for that design is contained in Appendix L. The prototype system (for microcomputers) is online and continues to be updated with current client data.

d. Organization

(1) Does the commanding officer believe in marketing planning and is formal planning ingrained with all top managers?

The Commanding Officer is without question the driving force behind all efforts to move the organization to an environment demanding a more aggressive consideration of marketing in the formal planning process. His strong belief in formal planning is evidenced by his initiative to bring top management and all department heads together annually at a remote location for a three day strategic planning conference. He has elevated the status of Code 09L, who is now considered the "marketing director" rather than the "client liaison officer." He has beefed up the marketing staff with qualified personnel. He organized and hosted the first community wide marketing conference in March 1985. He established the marketing task group in his own organization to get a viable marketing effort off the ground. He has carried over the "tiger team" concept to implement new initiatives, including the direct involvement of the marketing staff in new proposals to potential clients.

(2) Are all marketing functions under the direction of one executive who reports to the commanding officer?

The marketing director reports to the executive officer for routine administrative matters and directly to the commanding officer on all marketing matters affecting command policy.

(3) Is he or she qualified by experience/educational background to act as the marketing director of a major ADP organization?

The marketing director has no marketing or ADP background. She has had experience in organizational effectiveness in a previous tour of duty in the Navy's Human Resources Management program. While not directly related, that experience has not been incompatible with many of the marketing tasks for which she has assumed responsibility.

(4) Does he or she have an adequate supporting staff?

With a permanent supporting staff of two energetic, newly designated GS-12 civilians, a secretary, and a half-time E-9 (Command Master Chief), this marketing director has a better qualified supporting staff than either of the other NARDACs examined in this study. Moreover, when requirements dictate, the marketing team is temporarily augmented with a "tiger team" of technical experts. In this way the organization is able to maintain a distinct marketing focus while ensuring that technical aspects of various actions do not get overlooked.

(5) Do other key people in the organization understand and practice the marketing concept?

While ". . . communication is getting much better between the codes and the customers," (RANNELLS, 1986) the single greatest concern voiced by the department heads was their perception of incompatibility between maintaining an aggressive marketing posture, while simultaneously cutting back on resources to stay within Manage to Payroll (MTP) hiring guidelines. One key manager viewed the marketing staff as overhead which the organization cannot really afford, given the MTP constraints. If we accept McCarthy's view of the marketing concept, i.e., ". . . all the firm's activities should be organized to satisfy its customers, . . . rather than placing (the) main emphasis on internal activities and utilization of resources," we can conclude that all key managers do not fully understand the marketing concept. (1971, pp. 18, 27) This is primarily due to the inconsistencies they perceive in the overall direction of the command under NIF (which calls for aggressiveness in marketing) and MTP (which they view as an administrative constraint on their personnel resources).

3. **PART III. Detailed Marketing Activity Review**

   a. *Products/Services*

   (1) What are the main products/services supplied by NARDAC?

   NARDAC SAN DIEGO's "bread and butter" activities are large scale automatic data processing jobs that are processed on its on-site mainframes--either directly, or by teleprocessing. Many ancillary services are provided to customers in the course of carrying out this primary function, including administrative and facility support; technical support; software applications development; installing and operating new, specialized information systems; life-cycle management support; office automation; and microcomputer training. Figure 5.4 shows a breakdown of the organization's major sources of revenue.

   b. *Price*

   (1) To what extent are prices set on cost, demand, or competitive criteria?

   As with the other NARDAC's, NARDAC SAN DIEGO sets its prices based on costs. Demand can come in to play in the equation in the sense that increased efficiencies are attainable with higher equipment utilization. Thus, increased demand might conceivably reduce costs per unit of output, since the fixed costs can be allocated to a larger base. In addition, competition is viewed as taking on a larger role in pricing decisions for new contracts in light of the potentially larger role NARDACs

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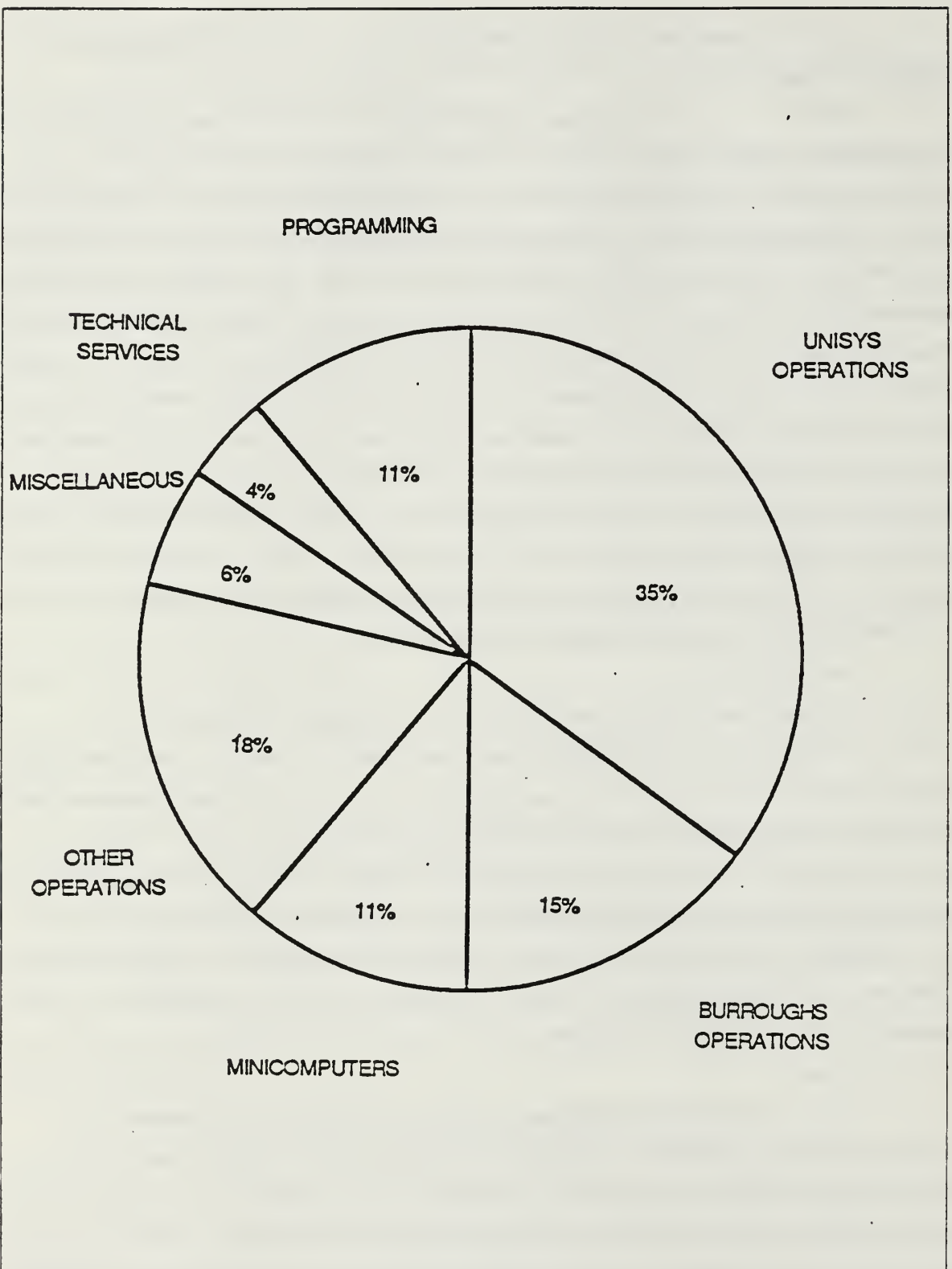
Figure 5.4   NARDAC SAN DIEGO Revenue Components.

will be playing in the competitive bid process brought about by SECNAVNOTICE 5231.

(2) Do key personnel understand how prices are set?

NARDAC SAN DIEGO has taken steps to educate all of its employees on how prices and costs are set, and on the relationship these factors bear to NIF. A five page pamphlet (developed by a Naval reservist on temporary active duty at NARDAC) which explains these concepts is being prepared and will be distributed to key employees. The pamphlet will also be made available to customers when deemed appropriate.

(3) How do customers psychologically interpret price level?

NARF SAN DIEGO has registered a history of complaints claiming NARDAC SAN DIEGO rates are too high. The exposure these complaints receive has served, probably to a greater extent than any other factor, to keep the pressure on NARDAC to keep its costs (and prices) under control. Prior to NIF, NARDAC customers had little reason to be concerned about costs. However, once these customers began paying for ADP services directly from their operating funds, the immediate (and lingering) perception was that they were being overcharged. Paying for services that were once performed in-house or provided for "free" has been a difficult pill for many customers to swallow. Therefore, many customers still interpret price levels to be excessively high. Time and sustained outstanding performance by the NARDACs will eventually erase these undesirable perceptions, provided the NARDACs adopt and maintain an effective marketing orientation.

(4) Would lowering/raising prices affect demand?

The general consensus among key managers was that if it were possible to lower prices slightly, little or no impact on demand would be felt. Raising prices, on the other hand, would be viewed as an extreme measure which might ultimately cause the departure of key customers.

c. *Advertising/Publicity/Public Relations*

(1) Are measures taken to enhance/promote the NARDAC image?

The authors were not made aware of any effort to promote the NARDAC public image in the print media or through other avenues of broad coverage communications. Letters are sent out to potential customers and pamphlets advertising the availability of microcomputer training receive fairly wide dissemination in the San Diego area.

(2) Is advertising/image enhancement budgeted for?

Code 09L now receives an annual budget of $48,000. These funds can be used for training, administrative, and promotional/ image enhancement activities. A specific plan for spending these funds was not formulated as of this writing. (MCMAHON, 1986)

(3) Do the themes, logo, and copy employed in advertising and public relations efforts add to or conflict with the desired image of the organization?

NARDAC SAN DIEGO logo, themes, and copy portray a neat, professional image consistent with the command's mission and purpose. It was noted that the incorporation of these "boilerplate" items into marketing presentations for proposals to new customers is an important priority for the marketing staff.

C. MARKETING STRATEGY STRENGTHS

Analysis of the systematic marketing audit conducted at NARDAC SAN DIEGO revealed the following obvious strengths in the organization's overall approach to marketing:

1. The Commanding Officer's recognition of the need to get the organization focused on long term strategic planning and to include marketing in the command's overall focus is seen as this regional center's most significant strength. His firm understanding of the marketing concept is evidenced by his initiation of numerous efforts directed at improving NARDAC SAN DIEGO's marketing posture. Most of these are enumerated in PART II, paragraph D.1 of the systematic marketing audit.

2. As compared to its Washington and San Francisco counterparts, the marketing staff at NARDAC SAN DIEGO is better suited, in terms of the background and experience of its personnel, and the size of the staff, to handle the diverse marketing tasks of a large organization. This has enabled the marketing team to analyze and identify those market segments which will benefit most from a directed marketing effort. Thus, this staff has done a better job at matching marketing resources to potential revenue return. Moreover, the "operationalizing" of the marketing effort through involvement in command proposals to secure new contracts can only tend to enhance the stature of the department. Ultimately, this is expected to pay dividends to the command in terms of cultivating a more technically qualified staff, well-versed in the marketing concept, and better able to serve the needs of the customer.

3. The "tiger team" concept, as exemplified by the formation of the marketing task group in 1985 and the group formed recently for the proposal to PMTC, is an example of how innovation can overcome limited resources to solve problems. It also provides a model for other NARDAC's which may be interested in finding ways to get the marketing staff directly involved in the operational aspects of the command.

4. A result of one of the efforts described above was the 1985 Marketing Task Group Final Report, which provided formal marketing analysis and customer satisfaction survey results. This was the only well-documented attempt to perform a market analysis by any of the NARDACs which was made apparent to the authors throughout the course of our research.

5. The Quarterly ADP advisory boards and monthly support meetings with larger revenue producing customers are seen as an excellent marketing tool for nurturing ongoing client relationships. By identifying problems in their early stages, before they have a chance to develop into major sources of irritation to the customer, they tend to reduce the potential for customer dissatisfaction. These meetings also serve the purpose of providing a forum for the introduction of new products and services which NARDAC may desire to market.

6. Finally, NARDAC SAN DIEGO has the facilities and equipment on board to meet the ADP needs of almost any size project. If necessary, it can bring to bear the expertise to hasten ADP procurement, and perhaps provide interim solutions. In essence, the NARDACs are "the only sole source game in town." (RANNELLS, 1986) which gives them a distinct competitive advantage over their major competitors.

D.   MARKETING STRATEGY WEAKNESSES

Analysis of the systematic marketing audit conducted at NARDAC SAN DIEGO revealed the following weaknesses in the organization's overall approach to marketing:

1. Despite a command atmosphere which encourages managers to develop strategy, to attend annual planning conferences, and to communicate through meetings and memos, NARDAC SAN DIEGO does not have a written core strategy to support command goals. As a result, the authors could find no evidence of any formulation of formal departmental objectives aimed at

implementing overall command strategy. Additionally, an effective, action oriented plan for marketing has not been developed because the goals and expectations of the marketing department have not been explicitly defined.

It is apparent to the authors that a lot of "goal setting," "prioritizing," and "planning" type activities take place at NARDAC SAN DIEGO, but these activities are not accompanied by definite actions. Stoner has observed that

> . . . managers who develop plans but do not commit themselves to action are simply wasting time. Ideas that are not accompanied by definite ways of using them have no practical effect. Planning is a process that does not end when a plan is agreed upon; plans must be implemented. (1978, p. 130)

A commitment to implementation of a long term strategic plan is considered essential for NARDAC SAN DIEGO to take advantage of the outstanding, but isolated ongoing efforts it has made to succeed. Such a plan would go a long way toward resolving the "disagreement about whether NARDAC should seek new business," (MCMAHON, 1986) and the inconsistency perceived by key personnel of operating simultaneously under NIF and MTP.

2. Related to the lack of a strategic plan is the lack of strategic control. While production control procedures may be in effect at the operational level, the lack of control mechanisms in place at upper levels of management to track progress toward completion of strategic goals greatly diminishes the chances that they will ever be carried out.

3. Key personnel do not understand the "marketing concept." When queried about aggressively marketing ADP services in the NIF environment, production directors of this multimillion dollar high tech organization responded: ". . . NIF is a farce," and ". . . to minimize my headaches it's to my advantage to slightly contract rather than take on new work." Attitudes like these are seen as major stumbling blocks to a successful transition to economic viability under NIF.

4. No follow up work to the Marketing Task Group's indepth customer analysis has been performed. An ongoing effort to perform market analysis, integrated with an effort to fully develop an automated marketing information system, is not being aggressively pursued.

5. Although the Client Liaison Officer/Marketing director has management experience in the Navy, she is not well qualified by experience or education in either marketing or information systems. She does not have a computer related subspecialty code.

6. The 38% of NARDAC SAN DIEGO business accounted for by a single customer (NARF) is seen as too large a share. A broader customer base is needed to establish greater independence and self-reliance under NIF.

VI. DISCUSSION, RECOMMENDATIONS AND CONCLUSION

A.   INTRODUCTION

An examination of the marketing strategies employed by the three NARDACs reviewed in this study reveals that none of these organizations has chosen to approach the problem in quite the same way. All have taken definitive steps to include marketing in their organizational focus. Each has engaged in marketing activities which have enhanced the NARDAC image, improved customer relations, and fostered (in varying degrees) the marketing concept among NARDAC personnel. Collectively and individually, there are several positive observations that can be made about the NARDACs' marketing efforts. Similarly, threads of commonality can be found among the lists of each organization's marketing strategy weaknesses. The following sections elaborate and bring into focus some of these observations.

B.   WHAT NARDACS DO WELL

Although a May 1986 study concluded that "NARDACs engage in little or no marketing," (COOPERS & LYBRAND, May 1986, p. GM-9) the authors found several instances of marketing successes which have occurred since the implementation of NIF. Customer relations, for example, are cited in official Navy reports as "excellent" at NARDAC SAN FRANCISCO and "improved" in the other regional centers. Rather than associate these improvements with chance, a more reasonable conclusion is that the NARDAC's became more responsive to the needs of their clients and worked to establish better client relationships through effective marketing.

Two of the three centers studied have taken direct measures to establish a legitimate, functional marketing department within the organization, one which bears full responsibility for coordinating all aspects of the marketing function and is given the resources to do so. These marketing organizations are barely beyond their formative stages, but in at least one case (NARDAC SAN DIEGO) the authors observed the direct involvement of the marketing department in essential market analysis, personal contact, and new customer development activities which would likely not have been performed in the mission-funded environment.

All three NARDACs have established Information Resource Centers (IRCs) which have wide ranging appeal from the strictly marketing viewpoint, despite their

apparent low immediate contribution toward revenue. "Information centers are hailed as the most effective way to educate and support end users," according to industry experts. (RICHARDSON, 1983, p. 17) Support for IRC's varies among the centers, but when viewed in the overall context of each organization's marketing orientation, resources are being applied accordingly to enhance the chances for success of the IRC.

Other marketing activities worthy of note include the quarterly ADP advisory boards, and the marketing "tiger teams" formed at NARDAC SAN DIEGO, both of which are elaborated upon in Chapter V.

C.   WHAT NARDACS DO POORLY

Despite the isolated successes mentioned above, the authors are compelled to concur with the Coopers and Lybrand conclusion that ". . . NARDAC management and staff are (generally) not yet accustomed to their new responsibilities of marketing professional services." (1986, p. GM-9) The marketing audits conducted at each of the NARDACs revealed that key managers generally had a solid understanding of their marketing environment (PART I of the audit), and the detailed marketing activity review (PART III) revealed, in general, that measures were being taken to understand and deal with specific marketing problems. However, PART II of the audit, which dealt with a review of each activity's marketing system, uncovered a number of deficiencies. These can be traced to a basic unfamiliarity with accepted principles of marketing, a nonsystematic approach to defining the role and functions of the marketing department in the organization, and a reluctance (with one notable exception--NARDAC WASHINGTON) to operate as a true business enterprise under NIF. The following examples (detailed in the audits of each activity contained in Chapters III, IV, and V) support this contention:

1. NARDAC WASHINGTON publishes a marketing plan that is not used as a working document.

2. NARDAC SAN FRANCISCO publishes a marketing plan that is not tied directly to the accomplishment of command goals.

3. NARDAC SAN DIEGO operated without a formal marketing plan until December 1986.

4. No NARDAC has a fully developed automated marketing information system which can be used to quickly extract market data to perform market analysis.

5. The marketing organizations at each of the NARDACs have evolved haphazardly, without regard for the scope of the marketing tasks to be performed, the costs of the resources applied, or the benefits hoped to be achieved. No evidence of any internal analysis of the problem of determining the appropriate staffing of the marketing organization could be found.

6. Marketing personnel often lack the credentials (i.e., either technical ADP or marketing education or practical experience) which would qualify them for the job.

7. Key personnel in certain NARDACs do not understand the marketing concept.

8. In general, the NARDAC response to changes in its environment is reactive rather than proactive. This problem may be rooted in the organization's history as a military organization led by a military commander in a mission funded environment. Often, however, the situation is exacerbated by the imposition of administrative requirements by higher authority which can be interpreted as undermining the commanding officer's authority over strategic business decisions. A hiring ceiling imposed by the "manage to payroll" directive is a good example of an administrative constraint which can conflict with a strategy of sustained business growth.[5] These observations are concurred with in an authoritative study of the Navy Industrial Fund Program performed for the Secretary of the Navy in June 1986. Regarding industrial operations, the study concluded that,

> . . .Large bureaucratic headquarters meddle in the day-to-day activities of the field operations and, in effect, are a significant cause of an inordinately large overhead structure. Little value is added by these large headquarters organizations. . . .The authority of activity commanders needs to be expanded so that they can truly be responsible and accountable for their operations. (HEADQUARTERS REVIEW REPORT, JUNE 1986, p. HQ-2)

9. Finally, and by far most importantly, the NARDACs have not yet implemented a long range strategic plan which sets the future course for the organization. Hand in glove with the absence of such a plan goes the absence of strategic controls to keep the organization on the course prescribed by the long range

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[5]"Manage to Payroll" actually gives mission funded commands more flexibility in hiring decisions than they previously enjoyed. The authors' view is that MTP can be a potential administrative constraint to NIF activities by limiting their short term capacity to expand beyond the MTP maximum payroll allocation.

plan. Only NARDAC WASHINGTON has taken observable steps toward the implementation of such a plan. These initiatives are delineated in Chapter III and elaborated upon in the next section.

D.   RECOMMENDATIONS

"Strategic planning provides the basic framework within which all other forms of planning should take place. Because all activities of an organization ultimately depend on its strategy, it is the most important type of planning we do:" (STONER, 1978, p. 100) This basic tenet of Stoner has formed a central theme throughout this study, and must be accepted as the first of two assumptions upon which our recommendations are derived.

The second assumption requires acceptance of the idea that NARDACs are involved in making exchanges in various markets, and use certain operating principles in dealing with each market. These operating principles' define each organization's marketing approach. Whether or not NARDACs should get involved in marketing is. therefore, not at issue. What is at issue is how thoughtful they should be at analyzing, planning, implementing, and controlling a program designed to create, build. and maintain a mutually beneficial exchange--i.e., how well they manage their marketing effort.

With these assumptions in mind. the following are offered as potentially useful suggestions to improve marketing effectiveness at the NARDACs:

1. DEVELOP A LONG RANGE STRATEGIC PLAN.

Strategic planning makes it possible to formulate the plans and activities that will bring the organization closer to its goals. Moreover, it enables managers to ". . . prepare for and deal with the rapidly changing environment in which their organizations operate." (STONER, 1978, p. 103) The increasing rate of technological change in the computer industry, the bureaucratic rules and regulations imposed in a continuously changing and increasingly complex administrative environment, and the long lead times involved between current decisions and future results (e.g., procurement of ADPE) underscore the importance of strategic planning.

NARDAC WASHINGTON is the only NARDAC observed in this study to have initiated action to develop a long range (five year) strategic plan. They have unabashedly referred to it as a *business* plan, and have elicited the assistance of a professional management consulting firm to initialize its implementation. In addition

to incorporating a formalized statement of the command's mission and goals, the plan includes a schedule of activities, objectives, and scheduled completion dates for desired activities. It calls for the development of directorate plans which include revenue projections and forecasts for reimburseable expenses, and staffing, space, and investment requirements. It provides guidelines to the directorates for making these projections, for identifying "key results factors" (measures of effectiveness), and for performing cost-benefit analyses for the various business activities under consideration. Finally, it identifies the person responsible for carrying out specific action items, and the dates each action item is due. In short, the plan framework calls for describing "what is to be done, when it is done, how it is to be done, and who is to do it." (STEINER, 1969, p. 7)

Whether other NARDACs choose to borrow from the NARDAC WASHINGTON profile or to use some other model for the development of their own long term business plan is not important. What matters is that an accepted, proven framework for strategic planning is used so that each NARDAC can develop for itself a clear-cut concept of what its business is and what its business should be. Once the strategy has been determined, it must be implemented through operational plans (including the marketing plan) designed by the directorates and approved by top management. Last, but not least, managers must check progress against the strategic plan at definite stages. This type of "strategic control" will tell management whether or not the strategy is being implemented as planned, and if the strategy is achieving the intended results.

2. NAVDAC MUST ESTABLISH A CONSISTENT POLICY FRAMEWORK FOR LONG TERM BUSINESS GROWTH.

A primary Navy Industrial Fund objective is to "provide to managers of industrial . . . activities the *financial authority and flexibility required to procure and use* manpower, materials, and other resources effectively." (DOD 7410.4-R, April 1982, p. 1-2) However, the imposition of administrative constraints such as hiring ceilings, manage-to-payroll restrictions, and ADPE procurement red tape seems to contradict the policy under which NARDACs were established as NIF activities in the first place.

It must be officially recognized at the highest levels of the Navy that the NARDACs and other industrial activities represent the *business* side of the Navy, and as such are very different from the operational side of the Navy. Under NIF, Congress does not appropriate an annual operating budget for NARDAC activities. Costs for

computer operations, civilian payroll, facilities, investment, and overhead must be recovered through revenues generated from mission funded customers. If the customers are not satisfied, Congress would expect those customers to take their appropriated funds elsewhere. This "market" relationship is a natural consequence of the industrial fund concept.

While it is recognized that some level of control is necessary to monitor the activities of organizations in the federal government, there is a fundamental difference in the level of control required for a mission funded activity as compared to that needed over an industrial funded activity. In the case of the former, the impact of restrictive rules, regulations, and tighter controls may necessitate operational cutbacks, but such actions normally are not a threat to the organization's long term survival. On the other hand, excessive controls imposed on industrial funded activities, however well-intentioned, can have far reaching and potentially damaging long term economic effects. This is particularly true in the case of the NARDACs, which must remain competitive with other suppliers, including private industry, if they are to survive in the marketplace. To be successful, the NARDAC commanding officer must be given the freedom and authority to determine his own product mix, the size of his own staff, the rate of growth he determines is necessary to meet future needs, and to make other business decisions consistent with staying competitive with the private sector. To the maximum extent possible, he must not be constrained in these areas by bureaucratic rules and regulations which may conflict with his approved long term business plan.

NIF demands that a NARDAC be run as a *business*. To be effective, commanding officers must be motivated to accept a greater degree of power, autonomy, and control over the future of their organizations. They must be encouraged to aggressively *market* their products and services in a *business-like* manner, free of artificially imposed constraints. NAVDAC must issue policy guidance to the NARDACs reflecting this fact. Because the purpose of a business is

> . . . to create a customer, the business enterprise has two--and only these two-- basic functions: marketing and innovation. Marketing and innovation produce results; all the rest are "costs." Marketing is the distinguishing, unique function of the business. A business is set apart from all other human organizations by the fact that it *markets* a product or a service. . . . Any organization that fulfills itself through marketing a product or a service is a business. Any organization in which marketing is either absent or incidental is not a business and should never be managed as if it were one. (DRUCKER, 1974, pp. 61-62)

Drucker's message to senior Navy officials is clear--either give the NARDACs the authority and flexibility to operate as business enterprises, or go back to the tightly controlled, inefficient, "mission funded" way of doing things. You can't have it both ways.

3. EACH NARDAC MUST DEVELOP A MARKETING PLAN AIMED AT MEETING THE GOALS AND OBJECTIVES OF THE COMMAND'S LONG RANGE STRATEGIC PLAN.

Marketing is so basic to the business enterprise that it is hard to imagine that strategic business planning could take place without having marketing as its primary focus. It has even been suggested that the two concepts are philosophically inseparable, and that what progressive organizations should be engaged in is "strategic marketing"--the marriage of classical marketing and strategic planning.

> Strategic marketing makes use of the tools and techniques of strategic planning (including environmental analysis, product to market analysis, and alternative strategy formulation) in addition to the tools and techniques of marketing management. In sum, it should:
> - produce a thorough approach to the development of organizational goals,
> - identify strategies or means to achieve those goals, and
> - elicit effective exchanges with a target market of clients. (PAPPAS & KLEIN, 1983, p. 11)

Whatever label is applied to the process, each NARDAC must examine in detail the problem of allocating scarce resources to solving problems. In 1983, shortly after the decision to shift the NARDACs from mission funded to Navy Industrial Funded activities, a professional management consulting firm conducted an in depth review of NARDAC WASHINGTON to determine the proper role and purpose of the Customer Liaison/Planning Office (Code 00TL) under NIF. The 50+ page report produced by American Management Systems contained lists of possible marketing activities and a suggested level of staffing to support NARDAC WASHINGTON's marketing effort. It was not a marketing plan, per se, because it was not in any way related to the organization's strategic goals and objectives. It was, however, a useful document in that it revealed the level of staffing that would be required to support a full-scale marketing effort. That level of staffing included a military 0-5 Department Head, two civilian GS-12 positions, an unspecified military enlisted market analyst, and an unspecified civilian grade program analyst. (AMERICAN MANAGEMENT SYSTEMS, October 1983, p. 42)

All NARDACs do not have the same requirements. Each must determine for itself, through its own strategic planning process, the level of effort that may be needed to carry out its own marketing plan. To help in determining the proper size and depth of the marketing staff, it may be advisable to form, in the "tiger team" manner of NARDAC SAN DIEGO, a marketing task group to develop the marketing plan first. Such an approach might serve several useful purposes:

a. By involving a cross-section of talent and key managers/supervisors from the entire organization, the development of the marketing plan would reinforce the idea that "marketing is not something that is done by a few professional people stuck away in an office somewhere. . . . Marketing is not a few techniques practiced by some specialists. Marketing is a concept that pervades the entire organization." (DEVOS, 1986, p. 24)

b. The marketing plan which results is more likely to become an operational, working document, because it will reflect the ideas and business knowledge of key production personnel, whose participation in the process gives them a personal stake in seeing to the plan's successful implementation.

c. Once the plan is finalized, top management can allocate resources to the marketing staff commensurate with the expected level of effort required.

4. FORMALLY DEFINE THE BILLETS AND FUNCTIONS OF THE MARKETING DEPARTMENT AND PERSONNEL QUALIFICATIONS IN THE COMMAND ORGANIZATIONAL MANUAL.

Once there is established a legitimate understanding of the needs and functions of a marketing department, the NARDACs should identify the billets required to support the marketing plan and the personnel qualifications necessary to satisfy the requirements of each billet. An effective mix of seniority, experience, and education must be taken into account. Also, consideration should be given to striking a balance between military and civilian personnel assigned to the staff. Naval officer billets should be designated for 0091 (Computer Science) or 0095 (Computer Systems Management) subspecialty codes only.

5. "OPERATIONALIZE" THE MARKETING STAFF BY INVOLVING CODE 09L/00TL IN NEW BUSINESS DEVELOPMENT EFFORTS AND OTHER "PERSONAL CONTACT" ACTIVITIES.

The NARDAC SAN DIEGO initiative to involve the marketing department directly in new customer development and in the competitive bidding process is viewed

as a signal of top management commitment to the organization's marketing focus under NIF. This focus is seen as essential for the development of an organization-wide commitment to caring about what the market needs and wants. On the other hand, if the marketing staff is treated as a vestigial part of the organization, not actively involved in day-to-day operations, performing mundane data collection or strictly administrative functions, quite the opposite can occur. It is likely that before long the organization will come to view marketing as "overhead," will develop a production orientation instead of a marketing orientation, and will begin to lose its true sense of purpose--i.e., "to create a customer."

Prior to NIF, the NARDACs existed without benefit of a marketing organization and without a marketing focus. Since the changeover to NIF, resistance to change has, in some cases, prevented the full assimilation of the marketing department and the full acceptance of the marketing concept into the entire organization. Even the most progressive of the production directors interviewed expressed a reluctance to involve the marketing staff in what he considered to be his own "internal" marketing effort in the area of customer development.

Where this trend exists, it must be reversed. Production directors must include the marketing department in these efforts in order to bring and keep the marketing staff "up to speed" on what is happening in the field. Ultimately, some of these customer development responsibilities can be shifted completely to the marketing staff. Similarly, the marketing department must rely on the technical expertise and participation of key production personnel in executing the details of the command's marketing plan, especially when the need arises to put together a proposal for new business. In such cases, the marketing staff will need to be augmented with technical experts from the production directorates.

> . . .Marketing is so basic that it cannot be considered a separate function (i.e., a separate skill or work) within the business, on a par with others such as manufacturing or personnel. Marketing requires separate work, and a distinct group of activities. But it is, first, a central dimension of the entire business. It is the whole business seen from the point of view of its final result, that is, from the customer's point of view. Concern and responsibility for marketing must, therefore, permeate all areas of the enterprise. (DRUCKER, 1974, p. 63)

To the commanders and managers who claim that they cannot afford to devote this level of effort to marketing, the only response of upper level management must be that, under NIF, you can't afford not to.

6. A STANDARDIZED MARKETING INFORMATION SYSTEM SHOULD BE DEVELOPED AND USED BY ALL NARDACS.

There is no apparent reason why an organization whose business is to market automated information systems should not have a marketing information system to enhance its own business efforts. Generic systems are available off the shelf which could be adapted to the NARDAC operation and implemented on one of the variety of hardware suites which exist at all the NARDACs. Independent efforts to develop custom designed databases are noteworthy but probably unnecessary in view of what is commercially available. NAVDAC should examine suitable alternatives and standardize the system to be used by the entire NARDAC community.

7. OTHER NARDACS SHOULD FOLLOW THE LEAD OF NARDAC WASHINGTON WITH RESPECT TO THE HIRING OF OUTSIDE CONTRACTORS TO AUGMENT IN-HOUSE CAPABILITY WHEN APPROPRIATE.

Neither NARDAC SAN DIEGO nor NARDAC SAN FRANCISCO have taken advantage of their authority to "contract out" business which, for a variety of reasons, they may be unable to handle or do not desire to handle in-house. NARDAC WASHINGTON, on the other hand, takes full advantage of the flexibility given Navy industrial activities by NAVCOMPTNOTICE 7600. (19 March 1986, pp. 1-2) By maintaining an "outside contractor" level of effort near the maximum allowable 49%, ". . . we manage to keep our in-house staff at a very stable complement. Business can expand and contract rather dramatically without really affecting our in-house staff." (BREMER, 1986)

Such comments are indicative of an attitude that exists among managers at NARDAC WASHINGTON which was not revealed to the authors at the other NARDACs. Unlike NARDAC SAN FRANCISCO and NARDAC SAN DIEGO, NARDAC WASHINGTON policy has been geared toward *achieving* the goal of a 20% annual rate of business growth. Instead of looking for reasons which would inhibit such growth, NARDAC WASHINGTON officers look for ways to use administrative constraints to their advantage. These managers have successfully shifted their pre-NIF view of themselves as "government servants" to a newly developed self-image as "business managers." According to several NARDAC WASHINGTON executives, this has translated into increased authority and accountability for managers, increased morale and productivity among employees, and increased business revenue

for NARDAC WASHINGTON. As one director succinctly put it, "NIF is the best thing that ever happened to us." (BREMER, 1986)

E.   SUMMARY AND CONCLUSION

To improve the efficiency and effectiveness of information resources management in the Navy, the Navy Regional Data Automation Centers were designated as Navy Industrial Fund activities in October 1983. This initiative was based on the premise that costs could be better controlled by establishing a true "buyer-seller" relationship between the NARDACs and their customers. "Buyers" were expected to find new incentives to economize in their use of services in order to keep their costs down. "Sellers" were expected to streamline their operations in order to compete effectively with alternative sources of ADP services. The synergy of the new relationship was expected to achieve startling new economies and revolutionize the Navy's approach to information systems management.

From the earliest stages following implementation of the new system it was widely recognized by NAVDAC and NARDAC executives that this new buyer-seller relationship brought with it distinctly new responsibilities. Since NARDACs could no longer depend on the Congress as their source of funds to maintain ongoing operations, customers had to be created and maintained. The NARDACs were now a business. Marketing had to be performed.

How to perform marketing is the central theme of this study. To find out how marketing is typically performed in the NAVDAC community, three different NARDACs--Washington, San Francisco and San Diego--were examined in detail. The methodology used for the examination was identical in each case. A systematic marketing audit, along the lines recommended by Phillip Kotler and other experts, was performed at each of the three regional centers. Collectively, the audits revealed unique approaches to the marketing problem at each NARDAC. Strengths and weaknesses of each organization's marketing program were identified and analyzed. Where certain marketing activities were judged to be potentially useful to other NARDACs, they were identified and elaborated upon. Common marketing pitfalls were also pointed out, the objective being to provide a possible source of "lessons learned" for other NARDACs which may find themselves following similar courses of action. The end result of the three marketing audits, and the analysis which accompanied them, painted a fairly graphic picture of the NARDACs with respect to

how they adapted to operating under NIF. This examination of the different marketing strategies developed by the NARDACs satisfied the first goal of this study.

On the question of what is the best, or most appropriate marketing strategy for a NARDAC to have, no simple answer can be given. Each organization must determine for itself the level of effort and quantity of resources necessary to satisfy its own particular marketing needs. However, the ultimate goal of this study was not to come up with a revolutionary secret formula for success. Instead, the authors hoped to establish a baseline for the development of an effective approach to marketing ADP services in the Navy.

In establishing this baseline the authors made two assumptions. First, no marketing strategy can be successful unless it is undertaken in the context of the organization's long-term strategic plan. Second, all NARDACs engage in marketing-- what varies is how effective they are at doing so. Proceeding from these assumptions, the authors listed seven distinct and quite implementable recommendations. The list is not necessarily all inclusive or even authoritative. It represents the opinion of the authors based on observations taken at the NARDACs over the past six months and an in-depth survey of the scholarly literature available on the subject. Of the seven recommendations, two are viewed as fundamentally essential to the future success of the NARDACs under NIF. They require: first, a commitment to strategic planning and control by NARDAC commanding officers that leaves no room for doubt about the organization's future course; and second, the recognition by NARDAC commanding officers, NAVDAC senior executives, and upper level Navy management that each NARDAC is now a business and must be managed as a business in order to thrive as a business. Toleration of anything less than a full commitment to these two principles can only diminish the NAVDAC community's potential for excellence.

APPENDIX A
THE SYSTEMATIC MARKETING AUDIT

PART I. The Marketing Environment.[6]

   A. Markets:

      1. Who/what are the organization's major markets:

         a. As identified by top management?

         b. As identified by marketing personnel?

         c. As identified by production department heads?

      2. Are the markets/market segments expanding or declining?

   B. Customers:

      1. Who are current and potential customers?

      2. Are current customers satisfied? Have steps been taken to measure customer satisfaction?

   C. Competition:

      1. Who are the organization's major competitors, both within the government and in the private sector?

PART II. The Marketing System Review.

   A. Objectives:

      1. Are the organization's long run and short run overall objectives and marketing objectives clearly stated? Are they consistent with NAVDAC policy and objectives?

      2. Are the marketing objectives measureable?

      3. Are the marketing objectives reasonable given current resources and opportunities?

   B. Program:

      1. Does a core strategy exist to support the stated objectives? Is the strategy in writing? Is it likely to succeed?

      2. Does the organization allocate enough resources to accomplish the marketing tasks?

         a. Personnel

         b. Budgeted Funds

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[6]Adapted from Goetsch (1983) and Kotler (1985), and modified by the authors to fit the NARDAC organizational profile.

3. Are marketing resources allocated by market/customer commensurate with potential revenue return?

C. Implementation:

1. Does the organization develop an annual marketing plan? Is the planning procedure effective?

2. Does the organization implement control procedures (Monthly, Quarterly, etc.) to insure that its annual plan objectives are being achieved?

3. Does a mechanism exist (e.g. marketing information system, market planning meetings) to enable key managers to identify potential new markets or customers, or match idle capacity to customer needs?

4. Are services provided to customers "equipment" oriented or "solution" oriented?

5. Has any effort been directed toward automating certain marketing activities with existing computer resources?

D. Organization:

1. Does the commanding officer believe in marketing planning and is formal planning ingrained with all top managers?

2. Are all marketing functions under the direction of one executive who reports to the commanding officer?

3. Is he or she qualified by experience/educational background to act as the marketing director of a major ADP organization?

4. Does he or she have an adequate supporting staff?

5. Do other key people in the organization understand and practice the marketing concept?

PART III. Detailed Marketing Activity Review

A. Products/Services:

1. What are the main products/services supplied by NARDAC?

B. Price:

1. To what extent are prices set on cost, demand, or competitive criteria?

2. Do key personnel understand how prices are set?

3. How do customers psychologically interpret price level?

4. Would lowering/raising prices affect demand?

C. Advertising/Publicity/Public Relations:

1. Are measures taken to enhance/promote the NARDAC image?

2. Is advertising/image enhancement budgeted for?

3. Do the themes, logo, and copy employed in advertising and public relations efforts add to or conflict with the desired image of the organization?

APPENDIX B
NAVDAC COMMAND GOALS

(HANCOCK, 1986, Memo 09-78)

1. Provide the policies, guidance, and management support for a broad-based consistent marketing effort to attract new customers and retain current customers of the NARDACs.

2. Develop plans which address the role of NAVDAC and the NARDACs in the Navy's information systems (IS) community to include management expectations for growth, significant challenges and strategies to meet them; improve NAVDAC utilization of the POM to guarantee resources available to support Navy-wide IS objectives.

3. Improve implementation of the Navy Life Cycle Management (LCM) process through increased LCM training and awareness, interpreting/modifying/adapting LCM to promote the use of advanced system development tools, techniques and equipment, and improved reporting procedures.

4. Improve the policy, management, funding and implementation of regulatory requirements such as internal controls, commercial activities, etc., to reduce their adverse impact on NARDAC operations, overhead, and rates.

5. Further the development of security techniques for data processing installations Navy-wide to include on-site security tests and evaluation, the conduct of risk management studies, and the development and implementation of contingency plans.

6. Expedite the acquisition, use and interoperability of software, hardware, communications and services to support the IS operations and mission of NAVDAC, the NARDACs and other Navy activities through increased use of umbrella contracts, standards and other procurement and management initiatives.

7. Improve the management of NIF and expand the current resource management program to improve the flow of financial and management information between NAVDAC and the NARDACs, provide a measurement of NARDAC performance, and support NARDAC efforts to be more cost-effective in long-range and short-range operations.

8. Improve the base of technology available to the Navy through the identification and evaluation of technologies, products, and trends, the sponsorship of technology in the Navy, and locating and exploiting opportunities for insertion of appropriate new technologies.

9. Provide policy, guidance, support and direction to improve hardware capacity monitoring, hardware capacity utilization and planning, and configuration management in the NAVDAC community.

10. Sponsor the Navy-wide development and implementation of information architecture studies, policies, plans and programs to improve Navy management of information as a resource.

11. Provide initiatives to improve the military IS career program and to further develop the career management of DON civilian IS personnel in order to assure the recruitment, retention and development of highly qualified personnel.

12. Expand the use of tools and techniques to improve productivity in the development and maintenance of Navy application software.

APPENDIX C
NAVAL DATA AUTOMATION COMMAND FUNCTIONS

(NAVDACHQINST 5430.1B, 1982, pp. 1-3)

1. Provide staff support to the Senior ADP Policy Official (Deputy Under Secretary of the Navy (Financial Management) (DUSN(FM)), CNO, and the Director, Department of the Navy Automatic Data Processing Management (Dir DONADPM) in all ADP matters.

2. Develop for approval by the DUSN(FM), the CNO and the DIR DONADPM, DON ADP policy, goals and objectives in support of ADP guidance issued by the Office of Management and Budget (OMB), the General Services Administration (GSA), the Office of the Secretary of Defense (OSD), and that which is developed internally.

3. Develop in consonance with policy guidance from the Senior ADP Policy Official (DUSN(FM)), the CNO, the DIR DONADPM and the other higher authority, concepts, objectives, plans and procedures relating to ADP and information systems in the Navy.

4. Manage, control, and direct field activities assigned.

5. Provides programming and budgetary guidance and support for Navy ADP Program for efforts, including review and defense of the Navy ADP budget, dollars, and manpower requirements. Manage the ADP Computer Acquisition Program (CAP) for the Navy.

6. Initiate projects to carry out goals and plans, and monitor their accomplishment.

7. Based on approval thresholds, review and approve ADPE, software, and service specifications and provide the single point of tasking the Automatic Data Processing Selection Office (ADPSO) to accomplish the selection and procurement of these resources for the Navy.

8. Based on designated approval thresholds, review and approve or recommend for approval by DUSN(FM) automated data systems (ADSs) plans, including requirements for hardware, software and services; monitor progress of these plans; and initiate such corrective actions as may be required.

9. Advise the CNO on ADP matters concerning the acquisition of ADPE for the use in the National Military Command System and the Worldwide Military Command and Control System.

10. Review and make recommendations to CNO on research and development relating to ADP, and perform ADP technology assessments for Navy-wide use.

11. Act as representative of the CNO for the exercise of CNO command responsibilities relative to the Department of Defense Computer Institute (DODDCI) in matters concerning administration and facilities operations.

12. Provide technical guidance and staff assistance in ADP matters to the Director, Command, Control and Information Systems Division (OP-942).

13. Designate in consonance with CNO staff lead ADP field activities for specific functional areas.

14. Assist ADP claimants to monitor and evaluate operation of Navy ADP systems.

15. Coordinate ADP systems to minimize duplication of reporting and/or processing effort.

16. In coordination with the Chief of Naval Education and Training (CNET), develop and promulgate policies and programs for the career development and training of ADP personnel throughout the Navy; advise on ADP manpower requirements of the Navy.

17. Initiate action for the development of standard automated systems throughout the Navy.

18. Prepare ADP technical standards for the use by all Navy activities; coordinate the Navy data element standardization program.

19. In coordination with the Commander, Naval Telecommunications Command, prepare ADP teleprocessing requirements and plans.

20. Coordination Navy-wide the control and maintenance of vendor-program for all Navy ADP activities.

21. Establish and monitor implementation of performance measurement program for all Navy ADP activities.

22. Manage the Command's computer system operations programs.

23. Provides staff support to CNO in implementation of the Department of the Navy (DON) ADP Security Program for all applications.

24. Provide technical management and liaison support for all Navy data processing installations (DPIs) and data processing programming support offices (DPPSO).

25. Conduct readiness reviews of ADP activities Navy-wide.

APPENDIX D
NARDAC/NAVDAF LOCATIONS

(NAVDAC, Vol. 1)

NARDAC Washington, D.C.
Washington Navy Yard
Washington, D.C. 20374

NARDAC Norfolk, VA
Norfolk, VA 23511

NARDAC Jacksonville, FL
Naval Air Station
Jacksonville, FL 32212

NARDAC New Orleans, LA
New Orleans, LA 70146

NARDAC San Diego, CA
Naval Air Station,
North Island
San Diego, CA 92135

NARDAC Pensacola, FL
Naval Air Station
Pensacola, FL 32508

NARDAC San Francisco, CA
Naval Air Station
Alameda, CA 94501

NAVDAF Great Lakes, IL
Bldg. 3200,
Naval Training Center
Great Lakes, IL 60088

NAVDAF Orlando, FL
Bldg. 2043,
Naval Training Center
Orlando, FL 32813

NAVDAF CORPUS Christi, TX
Bldg. 10, Naval Air Station
Corpus Christi, TX 78419

NAVDAF Lemoore, CA
Naval Air Station
Lemoore, CA 93245

NAVDAF Moffett Field, CA
Naval Air Station
Moffett Field, CA 94035

NAVDAF Pearl Harbor, HI
Box 140
Pearl Harbor, HI 96860

NAVDAF Newport, RI
Bldg. 11, Naval Education and
Training Center
Newport, RI 02840

NAVDAC ORGANIZATION

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                    ┌─────────────────────────────────┐
                    │   CHIEF OF NAVAL OPERATIONS      │
                    └─────────────────────────────────┘
                                    │
                    ┌─────────────────────────────────┐
                    │           COMMANDER              │
                    │ NAVAL DATA AUTOMATION COMMAND    │
                    └─────────────────────────────────┘
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| NARDAC WASHINGTON | NARDAC JACKSONVILLE | NARDAC SAN DIEGO | NARDAC NORFOLK | NARDAC NEW ORLEANS |

| NARDAC WASHINGTON | NAVDAF NEWPORT | NAVDAF PEARL HARBOR | NARDAC SAN FRANCISCO |

| NAVDAF GREAT LAKES | NAVDAF CORPUS CHRISTI | NAVDAF ORLANDO | NAVDAF LEMOORE | NAVDAF MOFFETT FIELD |
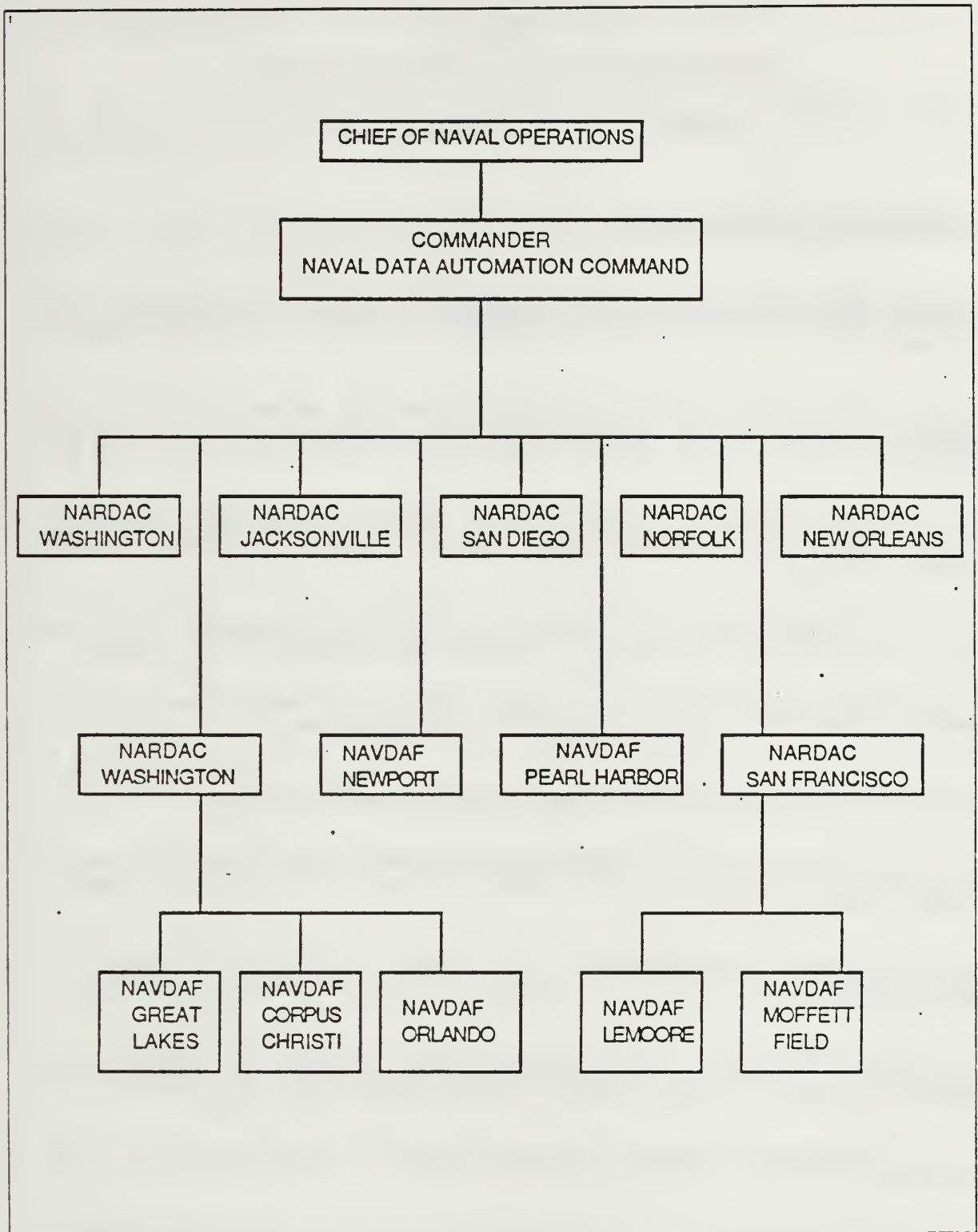
APPENDIX E
OBJECTIVES OF INDUSTRIAL FUNDS

(DOD Dir 7410.4, 1972, pp. 1-1 & 1-2)

1. Industrial funds are designed to:

   a. Provide a more effective means for controlling the costs of goods and services required to be produced or furnished by industrial- and commercial-type activities, and a more effective and flexible means for financing, budgeting, and accounting for the costs thereof.

   b. Create and recognize contractual relationships between industrial- and commercial-type activities and those activities that budget for and order the end-products or services, in order to provide management advantages and incentives for efficiency.

   c. Provide to managers of industrial- and commercial-type activities the financial authority and flexibility required to procure and use manpower, materials, and other resources effectively.

   d. Encourage more cross-servicing among the DoD Components and among their operating agencies, with the aim of obtaining more economical use of facilities.

   e. Facilitate budgeting for an reporting of the costs of end-products. This will underline the cost consequences of choosing between alternatives.

2. Specific objectives, when industrial funds are used, include the following:

   a. To furnish managers of industrial- and commercial-type activities with modern management tools comparable to those utilized by efficient private enterprises engaged in similar types of activities.

   b. To improve cost estimating and cost control by using the constraints of a formal contractual relationship and the requirement for the comparison of estimates and actual costs.

   c. To obtain alert, forward-looking financial planning at industrial- and commercial-type activities by making them financially dependent on reimbursements received for goods and services furnished in fulfilling orders from customers.

   d. To encourage producers of goods and services to coordinate labor forces and inventories with workload, budgeting, and cost control.

   e. To instill in the officials of ordering agencies a greater sense of responsibility and self-restraint in limiting their orders and in balancing the cost of specific goods and services to be ordered against the benefits and advantages of their procurement, especially in the light of alternative or competing demands.

f. To place ordering agencies in the position of critic of purchase prices (that is, costs of performing activities) as well as quality and delivery speed of the goods and services ordered.

g. To enable ordering agencies to budget and account on an "end-product" basis (the same as when buying from commercial contractors), simplifying budget presentations, budgetary control, and accounting procedures for both producers and ordering agencies.

h. To establish, whenever feasible, stabilized rates and unit prices for goods and services furnished by industrial fund activities, thus enabling ordering agencies to plan and budget more confidently.

i. To encourage ordering agencies' management to improve program planning and scheduling in response to producers' efforts

APPENDIX F
NARDAC WASHINGTON MISSION STATEMENT

(MCMILLAN, 1986)

To be the leader in providing full service automated information systems support to the U. S. Navy, Department of Defense and other organizations by supplying state-of-the-art, high quality services through effective and competitive solutions on a cost-reimbursable basis.

NARDAC WASHINGTON OBJECTIVES

1. To achieve a share of the market in each of the functional areas of our business which will in turn establish NARDAC WASHINGTON as the #1 provider in the Navy of AIS services in the United States Navy.

2. To manage NARDAC investment in facilities, equipment and personnel in a manner that will allow us to offer our client an economic advantage and provide NARDAC revenue dollars equal to cost.

3. To aggressively build NARDAC WASHINGTON's visibility, awareness and reputation of excellence with our clients through superior performance.

4. To manage NARDAC WASHINGTON in a growth oriented manner to meet the emergent aid requirements of our clients and maintain a 20% yearly growth rate through 1990.

5. To maintain a business/entrepreneurial environment which provides strong, personal and financial incentives that will enable NARDAC to attract the highest caliber of professional talent.

APPENDIX G
FY 1987 - NARDAC, WASHINGTON PLANNING SCHEDULE

(NARDAC WASHINGTON, 1986, p. 4)

ACTIVITY	OBJECTIVE	SCHEDULED COMPLETION
Finalize Mission/ Objectives and Plan Outline Procedures	Provide a basis for directorate planning	Fri. 9/19/86
Develop Business Plan Outlines	Provide a basis for FY 1987 Planning	Fri. 10/03/86
Review/Finalize Plan Outlines (Individually)	Provide a baseline plan for FY 1987-90	Fri. 10/10/86
Develop Summary Plan	Establish a NARDAC plan	Fri. 10/24/86
Conduct FY 1987 Planning Conference	Update FY 1987 Planning Decisions	Wed. 10/28/86
Develop Updates to 1987-90 Plan Outlines	Update FY 1987-90 Plan	Wed. 11/19/86
Review/Finalize Plan Outlines	Develop compatible Plans for 1987-90	Fri. 11/21/86
Document Plans	Establish 1st NARDAC, Washington Long Range Business Plans	Fri. 12/19/86
Review/Finalize Action Plans and Key Results for FY 1987	Finalize Plan of Operations for FY 1987	Fri. 01/09/87
Work the Plan	Monitor/Evaluate Results on a Quarterly Basis	Fri. 04/10/87 Fri. 07/10/87 Fri. 09/11/87

APPENDIX H
NARDAC WASHINGTON ADVERTISEMENT

(NARDAC WASHINGTON, 5 September 1986)

APPENDIX I
AN OVERVIEW OF OFFICE AUTOMATION

(ABLER, 1985)

AN OVERVIEW

OF

OFFICE AUTOMATION

or

(Almost)
Everything You Ever Wanted To Know About Office Automation
(But Couldn't Find In One Place Before)

By

CDR Ron Abler, USN
and
Bill Windle

NARDAC Washington

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1.1 Office Automation Defined. According to the General
Services Administration, Office Automation* (OA) is defined as
the use of information-processing technology to create,
process, retrieve, use, and communicate information to improve
the performance of managerial, professional, technical, and
clerical tasks. There are, however, as many definitions as
there are vendors and experts in the field. Nevertheless, all
definitions have three elements in common:

    a.   information in all its forms,

    b.   manipulated by information-processing technology,

    c.   to improve performance and productivity.

1.2 Growth. Growth in the office automation arena has been
phenomenal and is universally predicted to increase at an
accelerating rate. Unit sales are forecast to increase at an
annual rate of 35%. Thanks to significantly decreased unit
costs, total sales are expected to rise at a more modest 23%
per annum to a hefty $15.2 billion in 1988 ("Computer Age").
International Data Corporation (IDC) predicts that personal
computer sales alone will top $12 billion in 1985 and $19
billion in 1987, easily outselling mainframe computers. IDC
further claims that the outstanding trend in the 80's will be
the integration of computer systems into the office environment
(Kotelly, G.). Meanwhile, the Bureau of Labor projects that by
1995 there will be a 32% increase in the demand for writers,
editors, clerical supervisors, and secretaries ("Monthly Labor
Review," Nov 1983). Couple this with the expected 10-20%
annual increase in personnel costs due to inflation into the
indefinite future and the problem becomes clear: steeply
skyrocketing personnel demands at ever-increasing costs will
inexorably lead to backlogs, overwork, and decreased
organizational productivity. The same forces will inevitably
result in the predicted rush to office automation, whose end-
product is the estimated 15-45% productivity increase which
alone can counter the trend. The OA juggernaut has been set
into motion and is gathering speed, if not direction.

1.3 Navy Direction. The need for direction is critical. OA is
another ADP service in need of the same leadership, planning,
and support as have already been provided in the mainframe
environment. This point is highlighted in the National Academy
of Science's ADP Study which recommended that the Naval Data
Automation Command (NAVDAC) should establish a Central Design
Activity (CDA) for office support systems. This is entirely
appropriate. NAVDAC is tasked to provide the full range of ADP
services to the Navy. OA is simply the latest service made
available by ADP technology. It is also the capability most

* bolded words are defined in the Glossary.

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in demand today; and, of special interest under Navy Industrial Funding (NIF), OA is the service for which both existing and potential future NAVDAC/ NARDAC/ NAVDAF customers are most anxious to spend their ADP dollar. NAVDAC has a golden opportunity to establish its leadership in office automation.

1.4 Office Automation Benefits. According to Booz, Allen and Hamilton (Poppel, Harvey L.) in the most authoritive study so far done on productivity increases due to office automation, the benefits of office automation are three-fold:

    a. Efficiency (i.e., doing things right). Increased efficiency results in productivity increases gained from time saved in faster information creation, modification, communication, retrieval, and integration. Reduced costs also accrue from decreased information transfer expenses (postage, couriers, phone bills, travel), minimized or reduced information storage costs (file cabinets, floor space), paper reduction, and displacement of less efficient equipment (typewriters, uncoordinated terminals and personal computers, and copiers).

    b. Effectiveness (i.e., doing the right things). Increased effectiveness comes from improved information handling which results in better quality information, more complete analyses, enhanced control, better decisions, and improved overall organizational performance.

    c. Quality of work life. Improved quality of work life produces higher morale by allowing employees more creativity, greater scope for communication, and less frustration in accessing information and other people. Individuals have more control over their work flow from decreased fragmentation of effort and more timely feedback. The result is significantly increased job satisfaction.

1.5 Key to Controlled Implementation. The Washington area is key to controlled implementation of office automation in the Navy. As in other areas of ADP, top-down design produces tightly controlled, predictable results. Within an organization, top management is the deciding factor. In the Navy, the headquarters organizations determine the scope and direction of subordinate efforts. Top-down management of OA is the key to the control of proliferation. The secret is top-down planning with coordinated implementation. Currently, in the absence of higher guidance to the contrary, Navy commands are proceeding with independent implementation of OA with no effort made to consider, nor opportunity available for, coordination aimed at maximizing compatibility. As a result, a myriad of incompatible systems is being procured and installed throughout the Navy, a situation which threatens to complicate unnecessarily the already thorny (and not yet even defined) problem of inter-command networking, electronic mail, and information sharing.

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SECTION 2.   OFFICE AUTOMATION DEFINED

2.1 Objectives. The objective of office automation (OA) is to
assist members of an organization in optimizing administrative
and managerial functions by improving efficiency and increasing
effectiveness. The attainment of this objective entails a
disciplined and evolutionary transfer of new activities, office
communications, resources, policies, and practices into the
offices of executives, managers, knowledge workers,
administrative assistants, and secretaries. Adequate levels of
training and technical support will be critical in the
successful transition to an integrated automated office.

2.2 Current Office Personnel. The following is a list of the
functional types of individuals to be found in the average Navy
office and their job definition. These people (figure 2-01)
will be the primary beneficiaries of office automation. In
each case, office automation should help the person increase
productivity, increase the quality of their product, and
improve the timeliness of that product's delivery.

     a. Executive. An individual who holds the highest level
of managerial responsibility in an organization. An executive
makes the policy decisions which subordinates execute.

     b. Manager. An individual whose responsibility is the
management of a specified portion of the organization. A
manager is charged with the execution of policy and supervision
of production.

     c. Knowledge Worker. An individual whose efforts result
in products which contribute to or enhance the accomplishment
of the organization's mission. This category includes
practitioners of the gamut of academic disciplines (technical,
financial, educational, social, legal, medical, etc.) and
individuals who handle or interact with data or information as
part of their work function.

     d. Administrative Assistant. An individual whose work
requires knowledge of the methods and/or procedures that are
part of, or subordinate to, an administrative or program area.
These individuals carry out specific procedures and use
established methods. They apply practical knowledge of
regulations or precedent cases (OPM).

     This individual performs the following tasks for the
executive (or manager):

          (1) writing routine, standard memoranda based on
verbal directions from the executive.

          (2) maintaining the executive's calendar.

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                 ┌─────────────┐      ┌──────────────────┐
                 │  EXECUTIVE  │──────│  ADMINISTRATIVE  │
                 │             │      │     ASSISTANT    │
                 └──────┬──────┘      └──────────────────┘
          ┌──────┬──────┤
          │      │ ┌─────────────┐    ┌──────────────────┐
                   │ 1st ECHELON │────│    SECRETARY     │
                   │   MANAGER   │    │                  │
                   └──────┬──────┘    └──────────────────┘
          ┌──────┬──────┤
          │      │ ┌─────────────┐    ┌──────────────────┐
                   │ 2nd ECHELON │────│    SECRETARY     │
                   │   MANAGER   │    │                  │
                   └──────┬──────┘    └──────────────────┘
          ┌──────┬──────┤
          │      │ ┌─────────────┐
                   │  KNOWLEDGE  │
                   │   WORKER    │
                   └─────────────┘
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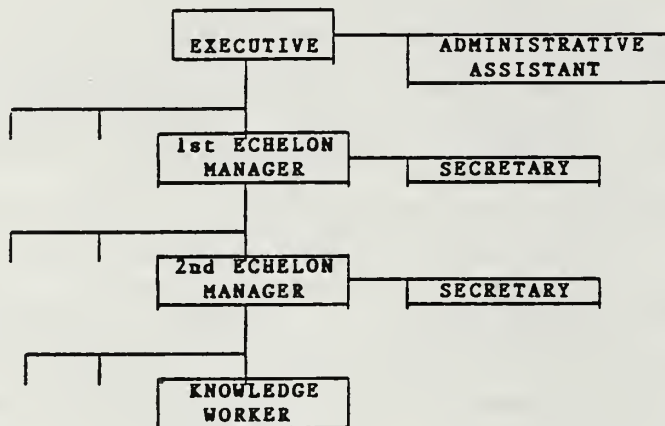
FIGURE 2-01.   Current Office Personnel

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(3) making administrative decisions within the executive's organization and distributing that decision throughout the organization.

(4) organizing and supervising the administrative component of the executive's organization,

(5) tracking work (or production) to be completed by the executive, the executive's organization, and organizations external to the executive's organization, and

(6) providing the work/product-delivery status to the executive.

e. Secretary. A person providing support to lower-level management and knowledge workers by preparing correspondence, maintaining attendance and cost records, answering telephones and taking messages, maintaining tickler files on correspondence, and maintaining files and records for administrative purposes.

2.3 Benefits of Office Automation. The following is a presentation of the benefits to be derived by each of the above defined categories of office personnel in an integrated office.

a. Executive OA Benefits. An executive receives direct benefits from OA in the form of: (1) much easier access to current or historical information to support the decision-making process, (2) the ability to do "what if" analysis, (3) more timely and more accurate reports, correspondence, budget, and planning, and (4) improved management control.

b. Manager OA Benefits. The manager has direct access to analytical tools such as text editing, spreadsheets, database management, program management, statistical tools, and graphics; as well as mainframe and network access. These tools allow the manager to increase greatly management productivity and control while reducing the amount of time involved in planning and project control. By reducing the amount of time documents are held up in information float, the manager, through OA technology, can improve response to and increase his control over: operations, initiating procurements and tasks, training, budgeting, and resource control (his entire span of control).

c. Knowledge Worker OA Benefits. A major direct benefit for the knowledge worker is the reduction of information float, allowing rapid continuous access to all relevant data, information, and fellow workers. An integrated OA system provides the knowledge worker a wider ability to access databases and co-workers. All the previously enumerated computer-based analytical tools are also available to this category of personnel.

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d. <u>Administrative Assistant OA Benefits</u>. This individual will use many of the OA tools for providing administrative support to an executive (or manager) in performing the following tasks:

   (1) for writing routine, standard memoranda: word processing, thesaurus, distribution list, spelling checker, and forms generation software.

   (2) for scheduling: meeting scheduler and calendaring software.

   (3) for administrative organization and communications: electronic mail, and forms generation software.

   (4) for tracking work (or production) to be completed: spread sheets, project planning, and electronic mail software.

e. <u>Secretary OA Benefits</u>. Direct benefits to the secretary are the reduction of media transformation (i.e., from dictation or hand-written sources to typing and then re-typing), and the reduction in time lost to "telephone tag" and telephone messages. The ability to index, store, retrieve, and change documents electronically decreases the cost and time to produce a document while increasing the quality of the product.

<u>2.4 Current Office Equipment</u>. The following is a list of equipment and office elements which need to be defined and/or standardized in definition and format, before or during the office automation effort.

a. <u>Office Equipment</u>. The equipment which may be found in any standard office and will be subject to change in the new OA office. There are many impacts and changes to this equipment which are part of a complete integrated solution. The components of the current office are:

   (1) **Copy Machine**

   (2) **Desk**

   (3) **File Cabinet**

   (4) **Microcomputer**

   (5) **Reference Manuals**

   (6) **Telephone**

   (7) **Terminal**

   (8) Typewriter

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(9) Space and Utilities

An example of the complexity involved is the file
cabinet. At some point in time during the office automation
effort, it will be economically feasible to replace the file
cabinet with a centralized laser disk, optical disk, or
microfiche storage system. However, the advent of this
technology will require a higher-speed LAN and/or
telecommunications line than initially envisioned, and the
workstation has to be upgraded to a higher bit-display
density. This will optimally require that a display standard
be in effect for those high-density displays; because, if it is
needed at the workstation, one may want to include it in the
document or get it printed out. This requires a laser printer
and interface. All of this technology is available now or in
development. The questions are, (1) is it economically
feasible, (2) is there a standard supporting the interface, (3)
is it in the marketplace and competitive, (4) is it a
government requirement, and (5) what is the life-expectancy of
the product?

The rest of the office automation effort requires the same
type of coordinated approach with regard to other affected
types of office equipment. The redefinition of these
components is planned to be accomplished by an OA Functional
Description.

b. Other Office Elements. Other items and terms which
are important in the area of office automation are listed
below. These elements will need to be defined as to format and
standardized as to internal structure, if it is to be
competitively procured or interfaced with more than one
vendor's product.

(1) Compound Document - an item which includes a
combination of text, graphics, and/or numerical data.

(2) Correspondence - written communication exchanging or
requesting information and/or data between persons;
e.g., letters, memos, notes, reports etc.

(3) Documents - written items on paper conveying
information.

(4) Electronic Mail - the generation, transmission, and
display of individual or organizational
correspondence and documents by an electronic
network.

(5) Ergonomics - the human-engineering interface between
an individual and the office equipment.

(6) Human-Factors Elements - the physiological,
behavioral, psychological, and sociological effect on
humans and organizations.

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(7)   Mailroom - the site responsible for the distribution
             of incoming and outgoing communications, messages,
             and memoranda, the archiving of corporate information
             and correspondence, and the control of
             correspondence.

       (8)   Office - the place in which the new OA functions are
             carried out. It contains various types of support
             equipment which will require significant changes to
             furniture, power, and wiring for networking.

2.5 Definition of Office Automation.   According to the
General Services Administration, Office Automation is the use
of information-processing technology to create, process,
retrieve, use, and communicate information to improve the
performance of managerial, professional, technical, and
clerical tasks.   According to Management Technology (Figure 2-
01), the most needed technologies in the automated office are
those which provide electronic messaging and teleconferencing.
Figure 2-01 also illustrates that, contrary to popular
thinking, the preponderance of productivity increase in OA
comes from functions other than word processing and electronic
filing.   This necessitates a re-thinking of the scope and
functions of OA.   Thus the definition must be expanded to
include the following: the electronic creation, indexing,
manipulation, distribution, access, and security for: text,
graphics, decision support, electronic mail, mainframe and
local data base access, printing, image transfer, help in
finding information, calendaring, administrative assistance,
briefing material, message drafting and releasing, and document
transfer.   This definition will continue to expand as
capabilities are added to support the office.

2.6 Components of Office Automation.   The components of office
automation include the hardware, software, interfaces, support,
standards, contracts, and training required to integrate the
functions of office automation from the local workstation to
other workstations and to networked mainframes in the Navy
NARDAC office automation system with gateways to other world-
wide systems.

                              8

COMMUNICATION TECHNOLOGY TO MEET OFFICE-USER NEEDS (RANK-ORDERED) *				
USER NEEDS	ELECTRONIC MESSAGING	TELECON- FERENCING	WORD PROCESS- ING	ELECTRONIC FILING
1. Access remote information				■
2. Reduce interruptions	■	■		
3. Reduce delays in written communications	■		■	
4. Reduce unsuccessful phone call attempts	■			
5. Support composition			■	
6. Decrease irrelevant information	■	■		
7. Increase flexibility of contacts	■	■		
8. Reduce unnecessary contacts	■	■		
9. Reduce media misunderstandings	■	■	■	
10. Support contacting communication participants	■	■		
11. Reduce travel	■	■		
12. Reduce time for written communication records	■	■	■	

* Source : Management Technology, July 1983

FIGURE 2-02. User Needs

reverse blank

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SECTION 3. NEED FOR INTEGRATED, STANDARDIZED OFFICE AUTOMATION

3.1 The Navy's Need for Office Automation. Over the next
several years, a number of forces will converge on Navy
operations which will require automation and integration via
communications of office functions.

     According to John Diebold, Chairman and founder of the
Diebold Group, Inc. ("Office Information Systems: Problems and
Promise") the "... real goal of integrated office systems is
not simply taking the independent tasks, such as clerical
functions, and mechanizing them, but rather, bringing together
the technical resources of the organization to support a white-
collar activity in a way that materially enhances it. This is
no trivial process. When done correctly, this integration is a
major corporate effort aimed at revitalizing professional
productivity." Diebold goes on to say that "... OA integration
in a meaningful way is a very complex business requiring
senior-level management commitment."

3.1.1 Expanding White-Collar Workforce. The Bureau of Labor
Statistics in its "Monthly Labor Review," November 1983,
projects that between 1982-1995 there will be a 32% increase in
the need for writers and editors, clerical supervisors, general
office clerks, and secretaries. It is unlikely that the Navy
will escape the same level of growth. Integrated office
automation can help limit the projected growth and its cost by
increasing the productivity of each current office worker and
thus limiting the need to increase the size of staffs.

3.1.2 Non-Standard, Non-Compatible OA Equipment. The Navy can
avoid non-standard, non-compatible OA equipment in one of
several ways: (1) a Navy-wide OA indefinite-quantity contract,
similar to the microcomputer contracts with Zenith, (2)
providing OA guidelines, and/or (3) providing recommended
compatible specifications for users to modify (within limits)
for their own procurements. In any case, the top-down
management of OA can go a long way toward correcting the
present state of undirected, uncoordinated procurement of non-
standard OA systems in the Navy which results in a a double
loss of time and money spent in wasted/unnecessary expenditure
and implementation costs. Every dollar the Navy spends on
hardware and software which is not capable of compatibility
across different manufacturer's lines is ultimately lost to the
Navy. The non-standard and/or incompatible OA equipment must
eventually be replaced, and additional time must be spent to
re-implement the new systems and re-train users.

3.1.3 Long-Term Office Automation Integration Investment. The
Navy will be able to realize long-term dollar benefits from
office automation only if it selects equipment which can be
integrated across an office automation network. Selecting OA
equipment or software which can be integrated will prolong the
investment life of the equipment. Another method to lengthen

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the investment life of equipment is to retrofit hardware to expand its generation life. An example of this would be putting co-processors on 8-bit personal computer systems to allow them to run 16-bit programs. Another method would be to buy equipment which has an excess of capacity or capacity for expansion, yet is compatible with current software and interfaces. An example of this would be the 32-bit computer technology instead of 8- or 16-bit technology which would provide power unneeded for current applications but usable for out-year LAN and multitasking requirements; and broadband networks versus baseband which will be required when multichannels are needed for inevitable expansion of networks beyond existing requirements. The only way this can be accomplished, however, is by planning for out-year requirements now.

3.2 Office Automation - A Growth Technology. In the Navy, as elsewhere, OA is expanding at a rapid rate. According to a recent report by Frost & Sullivan of New York City ("Computer Age"), annual growth rate of 35% for OA equipment units is predicted. In the same period, dollar sales are expected to increase at 23% annually, rising to $15 billion in 1988, up from 1983's $5.4 billion. The slower rate is due to a projected decrease in per-unit cost. The rapid growth in word processing applications will increase by 23% to $10.7 billion in 1988, with unit sales increasing by a hefty 30% yearly.

Furthermore, word processing software for desktop computers is rapidly approaching the level of sophistication formerly available only in dedicated stand-alone word processors. According to the Frost & Sullivan report, as the push toward office automation continues, the entire market for low-end word processors will grow during the forecast period. Personal computers will shape the way in which office automation takes form over the next five years. The report goes on to say that as office automation pushes deeper into managerial and professional ranks, the trends will be toward lighter and smaller - but more powerful - equipment. Frost & Sullivan state that the personal computer is "fast becoming the workstation of choice for managers, executives, and professionals."

Projections by International Data Corporation (IDC) (Kotelly, G.) place the 1985 dollar value for personal computer shipments in the U.S. at $12 to $13 billion. IDC goes on to say that by 1987 personal computers will far outsell mainframes and will have a shipment value in the U.S. of $19 to $20 billion. The IDC report also predicts that the decade's outstanding trend will be the integration of computer systems into daily life. First, the systems will be linked in-house and, secondly, to the outside world.

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SECTION 4. ORGANIZATIONAL AND TECHNOLOGICAL ARCHITECTURE

4.1 Organizational Architecture. It is essential that any OA
plan take into consideration the structure of the
organization. One view of what the organizational hierarchical
structure may look like has been offered by Dean Meyer
("Alternate Appraches to Office Systems"), co-founder of the
Diebold Automation Office Program. In Meyer's view there will
be five levels of computing in an integrated automated office
system: (1) personal, (2) group, (3) establishment, (4)
organization, and (5) world.

The personal computing level involves the individual and
uses microcomputer-based workstations. The software needed by
the individual at workstations can reside at any of three
locations: (a) in the workstation itself, (b) downloaded to
workstations from a local-area network, or (c) be available to
the workstation as part of a mainframe network. Tools
available at the personal workstation include standard word
processing, decision-support programs, database management,
graphics, and statistical analysis.

The group level of office automation systems supports the
needs of small working groups, such as project teams, co-
authors, and even larger groups such as divisions or
departments. The additional peripheral devices available at
this level include facsimile machines, high-speed printers, and
OCR equipment. Group-level computing centers also serve as
gateways for individual workstations to link to other groups
and their information.

The establishment level is designed to serve a building or
groups of buildings. At this level, the concept of
teleconferencing is introduced in the form of audio-graphic
conferencing rooms along with telephone voice store-and-forward
techniques.

At the next level, the organization level, all of the
above are available to an entire multi-sited organization, such
as the entire Navy.

The world level refers to all services that would be
accessible from outside the organization. These services are
available on an "as-needed" basis through time-sharing and
include services that: (1) are needed only occasionally, or
(2) are very specialized services that would be prohibitively
expensive to establish in-house.

4.1.1 Organizational Correspondence Flow. The typical
organizational correspondence flow consists of two different
tracks , one for formal correspondence and one for informal
correspondence.

Formal correspondence flows through an organization in a

tree-like structure. The first level usually consists of knowledge workers, who initiate draft correspondence. The draft correspondence is then passed to the the group leader (level 2 of the tree), who edits and approves the draft and has it typed. After typing, the draft correspondence passes up the chain-of-command, with references and background material attached, usually in a folder. The draft correspondence may travel up and down, as well as horizontally along several of the "branches" prior to arriving at the signing official's desk. The arriving correspondence folder has not only the original draft, background material, enclosures, and references; but also the comments of persons on the chop chain and the modifications they may have made to the original draft. An office automation system must follow this procedure as closely as possible in order for the users to feel comfortable with the system.

Informal correspondence has another flow. Informal correspondence is peer-to-peer correspondence; that is, knowledge worker to knowledge worker, manager to manager, etc. This correspondence is effectively handled in an organization by electronic mail.

4.1.2 Intra-command Organizational Considerations. There are additional factors which must be considered because of the electronic replacement of paper. Features must be added to an organizational OA system to enhance the elements missing from the generic OA system. Either missing or in a dissimilar form in the electronic office are several· features:

a. the chop list or "ladder" showing routing instructions,

b. the "has seen" list with signatures or initials, confirming who has seen and approved the correspondence,

c. the arrangement of the folder with its references, enclosures, background information, and

d. compound documents with pictures, diagrams, graphs or other image information.

The above problems are very complex and have not even been well defined yet. Electronic mail is touted as the solution, but electronic mail itself is not yet well understood. It is anticipated that one of the first tasks to be accomplished by the CDA for OA will be to tackle a Functional Description of electronic mail and its uses.

4.1.3 Inter-command OA Considerations. In order for correspondence (and other OA elements as well) to be transmitted between commands, the distribution must be standardized as it is in the Navy message traffic. The format for the "envelope," the "addressing," as well as the internal

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format for "From," "To," "Subject," "Reference," "Enclosures,"
and "serial numbers" have to be defined. Additionally, OA
substitutes have to be provided for otherwise missing
information, such as official signatures on correspondence,
orders, requisitions, forms, and memos. Fortunately,
automation offers more flexible, more secure, and higher
confidence-level control of signature-type authenticity of
correspondence than manual signature stamps or even image
versions of unfamiliar, therefore unrecognized, signatures.
Also to be considered are the storing, routing, indexing,
archiving, and controlled access to information.

4.2 Implementation into an Organization. The implementation
of office automation into an ongoing organization presents a
number of special issues which must be dealt with carefully.
In all areas, implementation must be a slow, carefully phased-
in process.

        Roadblocks to the implementation of OA lie in two critical
areas (Williams, R.L., 1984): (1) lack of commitment from top
management, and (2) day-to-day operational difficulties. The
three common results of inadequate commitment to OA by
management are:

        (1) No formal charter exists and therefore there is
no assignment of goals and responsibilities. Clear definition
of responsibilities is a crucial item because OA requires
extensive cooperation from all areas of ADP.

        (2) OA staffing is inadequate because the tendency is
to compromise both the size and talent of the OA resource
group.

        (3) Perception of cost-benefits becomes distorted. A
significant investment in OA must be made before cost benefits
will be realized, and then the benefits will not be in cost
savings but in increased performance and productivity.

        (4) Productivity increases and concurrent savings are
unlikely to be realized from a less than enthusiastically
supported OA system. [Ed.]

        Day-to-day operational problems stem from (1) poor
training, (2) resistance to change, (3) equipment breakdowns,
(4) inadequate on-site support, (5) depletion of supplies,
(6) lack of operator aptitude, and/or (7) lack of a positive
attitude toward OA.

4.2.1 Planning for Implementation. The following nine steps
(Ackerman, L.S., 1984) summarize procedures involved in a
successful implementation of new or advanced office
technology. These steps help prevent some of the human-factor
problems which can develop in office automation implementation.

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a. Understand and Accept the Needs and Opportunities for Change. OA workers must know the reasons for change and must have a vision of what the new system should be. Management must communicate its intentions concerning the implementation of new or expanded office technology if success is to be achieved. Communications is a critical element in this phase of the change or implementation process.

b. Assess the Situation. Once the picture has been created as to what is desired, questions must be asked to identify what changes must be made. The opportunity to maximize current strengths is always a benefit to an organization. Determining needs, difficulties, and obstacles should be done at this point; and at the same time people should be encouraged by every possible means to support the new system.

c. Design the New System. The design phase is where a tangible vision of the desired objective is created. This process requires the cooperation of all key individuals and organizations who will be impacted by the change.

d. Begin the Procurement Process. This requires as much lead time as possible. It should already be ongoing while the next two steps are being completed. [Ed.]

e. Conduct an Impact Analysis. From the pure systems theory, any change to one part of an organization will have direct and indirect impacts on other parts. Identifying the impacted areas can help management prepare for problems which may arise.

f. Plan and Organize for the Change. A transition team should be established to ensure that nothing is forgotten or overlooked. Individuals who have responsibilities for the change can use the impact analysis study to develop the implementation process.

g. Implement the New System. Once the plan has been created and approved [and the hardware and software has been delivered] the actual implementation can begin. The transition group created in the step above monitors all events, provides and receives feedback necessary to make any mid-course corrections, and ensures that these changes are communicated to and from all segments of the organization.

h. Formalize the New System. This step helps to establish the new system as the norm. It takes place when the organization has accepted and is willing to assume full responsibility for the new system.

i. Evaluate the Change Process. Management must take the opportunity to evaluate the change and learn from the experience. Cost justification most frequently takes place

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during this phase. Post-implementation productivity increases
result in savings of time and/or money which are used to
justify the cost of the initial system as well as expansions to
it.

　　j. Monitor and Fine-Tune the New System. It is important
to establish "fine-tuning" as a positive, inevitable, and
required process. This phase gives the organization the
opportunity to set goals for improving the system.

4.2.2 Current Navy OA Status. Before implementation of an
integrated office automation system can begin, steps must be
taken to develop a baseline review and analysis of the state of
OA in the Navy now. This data and information will allow for
the accurate and realistic development of plans to advance and
integrate OA in the Navy. If we don't know where we are now
and the condition we're in, it will be difficult to judge how
we want to get where we should go.

4.2.3 Needs Assessment. After the review of the status of OA,
the next step is to develop a needs assessment (Walsh, R.J.,
1984) of OA in the various levels and organizations of the
Navy. Paul D. Oyer, president of the Office Automation Society
International states ("Office Information Systems: Problems
and Promise") that "ignorance of peoples' needs may also lead
many companies to repeat the MIS errors of the 1960's and try
to automate the office as near 100% as possible." A customer
"do-it-yourself" needs assessment methodology is currrently
under development at NARDAC Washington.

4.3 Technological Architecture and Integration. There are six
levels of integration used in office automation. Each level
(shown in Figure 4-01) has a number of issues associated with
it:

　　a. Level 1. Stand-alone Workstation - a workstation with
no communications capability and no requirement to pass data to
other computers or workstations.

　　Issues to be considered: ·Placement and configuration of
hardware and software, data compatibility between software,
peripherals, maintenance, training, supplies, user resistance,
and support. ·

　　b. Level 2. Linked Workstations - workstations pass data
to each other via telecommunications with users manually
initiating the transfer, or by physically exchanging diskettes.

　　Additional Issues: Standard communications protocols,
standard data interchange format, and software data-
compatibility.

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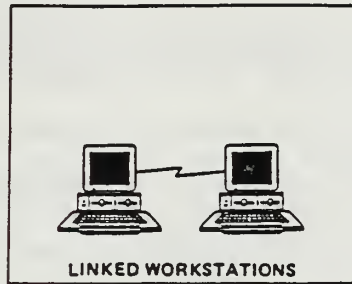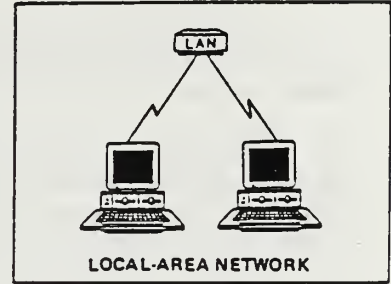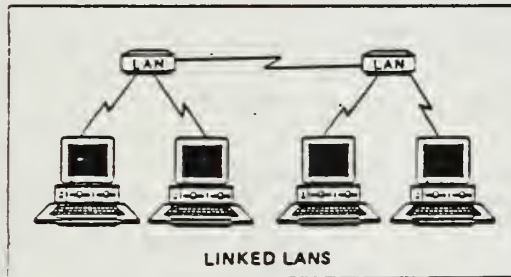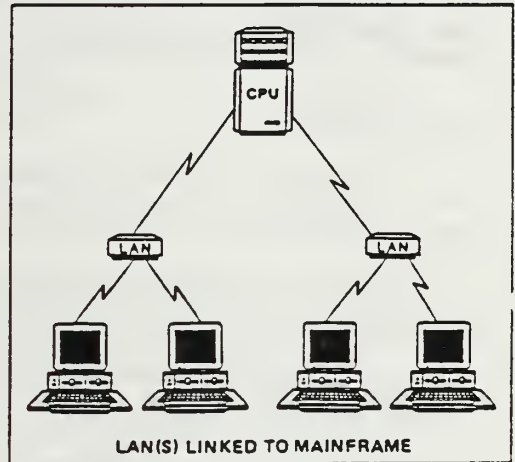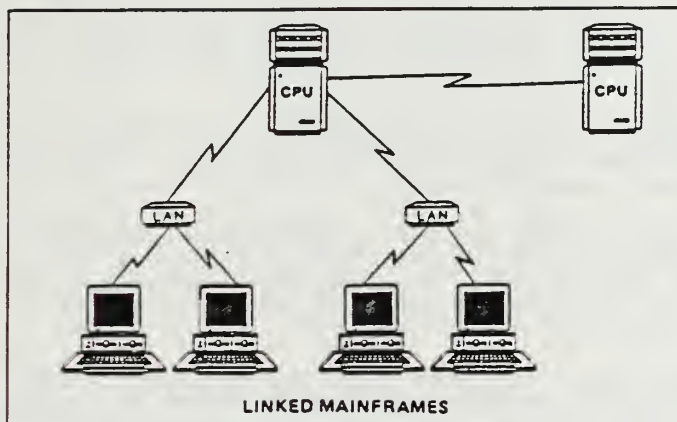
FIGURE 4-01. OA Technology Integration Hierarchy

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c. <u>Level 3</u>. Local-Area Network - workstations share data
and are linked to a local area network (LAN). File service and
other shared services and peripherals are provided.

Additional Issues: Compatible hardware, system software,
and applications software; shared software and data.
Administrative issues include: routing, chopping, network
administration, access control, authentication, mailroom
automation, automation of incoming documents (OCR), archiving
of documents, generation of route sheets and control, assigning
of action, distribution, deadlines, maintenance of original
documents, and tickler file.

d. <u>Level 4</u>. Linked LANs - workstations on different
LANs have access to the same data. Workstations can
communicate with other workstations on other LANs.

Additional Issues: Inter-LAN software, routing through
the networks.

e. <u>Level 5</u>. LAN(s) Linked to Mainframe - workstations
have access to mainframe data and to other workstations on
similar networks on the same mainframe.

Additional Issues: Network interfaces to and from
mainframe, mainframe routing software, mainframe LAN software,
database access software, store-and-forward software.

f. <u>Level 6</u>. Linked Mainframes - workstations can
communicate data to and from workstations on other
mainframe/network combinations.

Additional Issues: Format standards, user and document
authentication, routing and route assignment, routing table
maintenance, store-and-forward relay, priorities, electrical
transmission, receipt and control, and wide-area network (WAN)
hardware and software, gateways to different mainframes.

4.4 <u>Other Issues</u>. Along with the issues mentioned above,
there are a number of other human-factors, administrative, and
organizational items which have to be addressed. Some of these
issues are: (a) workstation design, (b) health hazards in the
new automated office, and (c) job-design problems. Very little
has been done in the Navy in these areas; but, as the OA
project progresses, these and other issues will come into
sharper focus. At that time, sound recommendations can be made
in order for the issues to be dealt with in an effective
manner.

4.5 <u>Office Automation Technical Interface Standards</u>. The
integration of microcomputers, workstations, word processors,
and mainframes will require interfacing at several levels.
This access by a local unit such as a terminal or intelligent
workstation should be addressed in a Functional Description

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based on the seven-level International Standard Organization (ISO) Open System Interconnection (OSI) Reference Model or equivalent. Protocols, standards, interfaces and software to be discussed include:

    a.   Communications protocols,

    b.   Microcomputer/workstation software (e.g., systems software, utilities, application software),

    c.   Software for Sperry, IBM, and other Navy mainframes,

    d.   File-transfer protocols,

    e.   File/expanded data interchange formats ,

    f.   Word processing/document interchange format (e.g., Navy Document Interchange Format (DIF)),

    g.   Image and graphics protocols,

    h.   Network protocols (e.g., TCP-IP), and

    i.   Communications/network ports/servers to wide-area networks (WANs).

4.6 Navy Procurement. The Navy's office automation procurements and guidelines should be aimed at the mainstream of the OA market. That can be accomplished by compromising on the achievement of three objectives : (1) maintaining the competitive aspects of contracting out, (2) acquiring a state-of-the-art system, and (3) having a system which is defined by formal standards. This system will be the de facto standard, state-of-the-art, competitively.acquired system.

4.6.1 Outside Competitive Contracting. To meet this objective, the Navy must maximize competition in the effort to implement a fully integrated office automation system. Competition reduces the cost of the procurement of hardware, software, training, and support for the OA system. Reduction in cost will push the cost-benefits of OA even further for the Navy. One trade-off is that competitive procurement takes longer and this requires the best of long-range planning.

4.6.2 State-of-the-art System. Care must be taken to ensure that the attempt to select proven, standardized technology does not result in acquisition of passe' and obsolete systems. This requires a delicate balance which demands very finely tuned specifications in an RFP. Being on the leading edge of technology assumes the risk that the technology being acquired will not have been completely integrated or fully developed yet or, worse, not be accepted by the marketplace and thus be unsupported.

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<u>4.6.3 Formal Standardized System</u>. Due to the amount of time
required to develop standards for systems, develop the user
requirements, and acquire the OA equipment, the half life of
technology may have been passed by the time the system is on
contract. The system may be obsolete before the system is
placed in the users' hands. This is especially true if the
evaluation of the system is based on standards and cost. Since
such a system has surpassed its technology life, it may be
discounted heavily and win the low bid.

<u>4.6.4 Mainstream Market Technology</u>. The Navy must attempt to
acquire only hardware, software, and technology which is in the
mainstream and at the forefront of either commercial or
military usage. By taking this approach the Navy will be able
to benefit from technological improvement made by either the
original manufacturer, value-added resellers, or other third
party vendors.

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SECTION 5. ISSUES AND PROBLEMS

5.1 New Office Procedures. Office Automation will change the
administrative procedures of the automated office. The new
procedures still need to be developed. The office automation
procedures to be addressed in this section are the manual
versus automated document handling, including: routing,
release, flow, editing, control, chopping, authentication,
mailroom handling, and archiving of notes, memoranda, briefing
papers, Navy messages, decision papers, and letters in a Navy
office.

5.2 Implementation of Office Automation and Office
Procedures. The changes and training for new office
procedures brought about by implementation of office automation
technology will need to be developed and implemented with
extreme care, due to the sensitivity of many individuals to
changes in their office environment. The productivity
enhancements to be gained by the effective use of the new
technology can easily be negated by any individual who views
the tools as a replacement scheme for current employees,
instead of as an enhancement to current employees
productivity. Some of the things which can be done to prevent
or limit user rejection of OA are the following:

    a. An adequate usage level must be established and
maintained by all users, from executives to secretaries. To
achieve this, the system must offer a necessary range of
services or else the users will not properly or adequately take
advantage of the system.

    b. There must be an adequate number of workstations
installed and operational so that potential users don't have to
wait for long periods of time.

    c. All office workers must be encouraged to use the
system themselves, rather than depend on others.

    d. A "critical mass" of users must be established in each
unit where office automation is to be implemented. Below this
critical mass, OA must be "pushed" and is not effective. Above
the critical mass, the demand for and use of OA is self-
sustaining.

    e. Top management must express in a clear continuous
manner their support and encouragement for the use of office
automation systems. One of the easiest and fastest ways to
succeed is to mandate that all correspondence in and out of the
top offices must be transmitted electronically in fully
processable form.

5.3 Phased Evolution and Implementation. Introduction of
integrated office automation technology into the Navy must take
a phased approach. The phased evolution of OA is necessary if

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confusion is to be avoided in achieving a balance between the
latest proprietary office automation technology, the
development and evolution of standards and their
implementation, and obtaining the best competitive benefits of
the newest OA technology. A phased approach will allow for the
initial installation of a locally integrated office automation
system. The next level of introduction would be the expansion
to inter-command database connectivity. From there, the next
step would be full inter-command connectivity, with the last
step being full Navy interconnectivity and access to the
outside world.

The diagram below shows the progression of the phased
approach.

```
(1)             (2)             (3)                         (4)

                (STAND-          (LAN)                       (WAN)
                 ALONE)

                                                     WORLD-
                                             -----> WIDE
                                             |      INFORMATION
                                             |      RESOURCES

MANUAL          LOCAL           INTEGRATED          COMMAND
OFFICE ----> WORK -----> WORK      ----- |----> TO
OPERATIONS  STATIONS     STATIONS        |       COMMAND

                                             |      NAVY-WIDE
                                             ----> CONNECTION
```
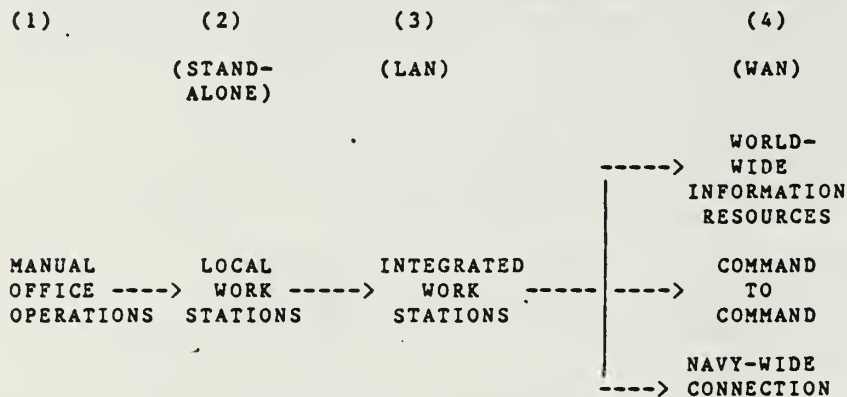
5.4 Rapid Technological Advancements. The manufacturers of
office automation equipment are now at a point where new and
major advancements in integrated OA systems are being
introduced in rapid succession. Two reasons for this rapid
introduction of advanced technology are (1) the competitive
market element and (2) the effort to reduce manufacturing and
maintenance cost of equipment.

The impact of this continued rapid technical
advancement and faster introduction of newer equipment means
that the planning for, selection of, and implementation of
integrated office automation equipment has to be done with a
high degree of control.

5.5 Requirement for Office Automation Coordinating Group. A
centralized CDA for OA is required to plan, implement, and
evaluate the impact, effectiveness, and efficiency of
integrated office automation systems. These requirements must
be addressed on a continuing basis, and the information derived
will help guide the future direction of office automation in
the Navy. The CDA must coordinate office automation issues
from definition through acquisition to implementation in the

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Navy and between the Navy and other Department of Defense (DOD) activities so that the efforts and work being generated by one DOD group are not being unnecessarily duplicated by other groups. Not only would this be a waste of effort, but it would lead to smaller OA procurements, and subsequent lower discounts, and to procurements of systems which cannot communicate/pass data to each other, or cannot pass data while retaining the same content or format.

5.6 Procurement Problems. The current procurement obstacles for an individual command include the time and effort required for individual competitive procurements including: writing specifications, obtaining approvals, executing the required justification studies, and planning for the exact number of workstations and their configuration, all the while complying with other standard Navy procedures. The time and effort involved in the procurement means that the command has to make a major commitment of time, out-year money, and personnel resources prior to realizing any of the gains in productivity which are available from OA. This delays the modernization and replacement of OA equipment, software, and support. A centralized indefinite-quantity contract for OA hardware, software, furniture, training, maintenance, and support is needed.

5.7 Lack of Office Automation Standards. The lack of current OA standards and procedural manuals for office personnel to use on an organization-wide basis will limit the growth and benefits of OA.

Currently, each Navy office is incapable, alone, of specifying an integrated system because of the lack of standards (disk, LAN, software, bus), common requirements, common interfaces, and Navy-wide coordination needed to accomplish the linking of systems. This wastes money by not being able to transfer data and documents directly between OA systems, which usually requires expensive operator intervention to re-input the required data.

5.8 Lack of Media Conversion Facilities. Currently in office automation there are a large number of different disk formats and sizes, a situation which limits the ability to transfer files and data among various systems. This problem must be addressed and standards developed to deal with them.

Currently, with a lack of standards for disk formats for OA, and with many OA systems incapable of communicating with other systems, the Navy has many sources of information on many disk formats which need to be transferred on a day-to-day basis. The Navy has no walk-in (or other easily available) facility to perform that transfer of information between systems. Thus the Navy spends many man-hours in lost productivity re-keying data which has already been automated, but is in the wrong disk, document, and/or data format on the

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wrong system. NARDAC Washington has been funded by Department
of the Navy Office Automation and Communication System
(DONOACS) to procure and operate a prototype media-conversion
facility to solve this problem. Needs analysis and a market
survey are underway. Procurement, installation, and
operational implementation will be completed in FY85. It is
anticipated that this capability represents a wide-open market
opportunity under NIF for at least the next 3-5 years until the
OA vendors offer the service as a no-additional-charge part of
their installation service.

5.9 User Training for Office Automation. Continued training
for all levels of personnel in the use of OA hardware and
software will be a key element in the success of OA
implementation efforts. The techniques used to support
continuous OA training must be able to deal with rapid changes
in hardware, software, and communications. Standard classroom
techniques should be avoided in this training effort whenever
possible, because of the high cost, lack of flexibility, and
disruption of work schedules. To achieve the best results,
computer-based training techniques should be used right on the
actual OA equipment. This process offers a double benefit:
(1) all training is standardized and can be updated quickly,
and (2) the students are "learning by doing." Computer-based
training also offers a very economical method of instruction
since the trainee doesn't have to travel, and the costs of
instructional staffs are reduced. Trainee performance can be
centrally monitored and administrative records can be easily
updated with computer-based training techniques.

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APPENDIX A.   GLOSSARY

Administrative Assistant - the person responsible for providing
    administrative support to an executive/manager including
    the following tasks: routine memoranda, maintaining the
    calendar and scheduling meetings , making administrative
    decisions within the executive's organization, organizing
    the administrative component of the executive's
    organization, and tracking work (or production) affecting
    the executive.

Compatibility - the capability of equipment to use the same
    data, data formats, software, and peripheral components.

Compound Document - a document which includes a combination of
    text and graphics and/or numerical data. New technology
    in this area would allow workstations to combine graphics
    and data into a report to be produced concurrently instead
    of in two phases (graphics and text) as in current
    technology.

Copy Machine - a device which is used to reproduce exact
    copies of documents. New technology attaches this device
    to the network as a shared device for producing compound
    documents.

Correspondence - written communication for the purpose of
    exchanging or requesting information or data between
    persons, e.g., letters, memos, notes, reports, etc.

Desk - a table, counter, or stand at which an individual
    performs his/her duties. New technology expands the
    workspace to include the workstation, its power
    requirement, and communications media. Different designs
    to include new ergonomic concerns must be considered.

Deskstation - see workstation.

Documents - written items on paper conveying information or
    data.

Electronic Mail - the generation, transmission, and display of
    individual or organizational correspondence and documents
    via an electronic network.

Ergonomics - the interface or relationship of an individual to
    the office environment.

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Executive - the person who determines the direction, goals, organization, and products of the organization. This person has the authority to determine the organization's budget and pricing, policies, large money and resource commitments, space allocation, and personnel allocation and hiring. The executive is responsible to higher authority for the continued viability of the organization.

File Cabinets - containers in which papers are kept usually in a chronological or alphabetical order by subject for ready reference. New technology will convert file cabinets into electronic and photographic/optical elements of office automation.

Human-Factors Elements - the physiological, behavioral, psychological, and sociological elements of office automation on humans and organizations.

Information Float - the time lag between the availability of information in rough form and the time when the information is available in smooth document form ready for viewing by the intended user. The document is either in transit, being entered, retyped, or proofed.

Knowledge Worker - someone whose work includes the management of, accessing, or need for information to facilitate working; a professional, desk or "white-collar" worker; a person who uses information to work or develop the organization's product. Examples include many different professionals and job titles such as: program, budget, planning and systems analysts; teachers; administrators; and office workers.

Local Area Network (LAN) - an information transport system for data transfer among office workstations, file servers, and peripherals via an interconnecting medium within the bounds of a single office building, building complex, campus, or station complex.

Manager - person reporting to a higher manager or executive for the performance of his organizational unit, his unit's work, productivity, staffing, attendance, and pay authorization. A manager assigns and monitors individual work efforts, and assigns resources allocated to him or her against approved organizational tasks.

Microcomputer - a physically small unit with a keyboard, CRT, CPU, and storage devices such as cassette tape or floppy disks. It is capable of solving problems by accepting data, performing prescribed operations on the data, and supplying the results of these operations.

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Office - the place in which the business functions of an
    individual are carried out. It contains various amounts of
    support equipment to facilitate the accomplishment of
    those functions. New technology will force changes to the
    functions, equipment, procedures, power requirements, and
    space allocation within an office.

Office Automation - According to the General Services
    Administration, Office Automation (OA) is defined as the
    use of information-processing technology to create,
    process, retrieve, use, and communicate information to
    improve the performance of managerial, professional,
    technical, and clerical tasks. OA includes the electronic
    creation, indexing, manipulation, distribution, access,
    and security for: text, graphics, decision support,
    electronic mail, mainframe and local database access,
    printing, image transfer, help in finding information,
    calendaring, administrative assistance, briefing material,
    tickler, message drafting and releasing, and document
    transfer.

Secretary - person providing support to managers and knowledge
    workers by preparing correspondence, maintaining
    attendance and cost records, answering telephones and
    taking messages, maintaining tickler files on
    correspondence, and maintaining files and records for
    administrative purposes.

Telephone - a device for reproducing voice sounds at a
    distance. New technology in this area points toward voice
    store-and-forward, and attaching voice comments to
    electronic correspondence.

Terminal - a device that is usually equipped with a keyboard
    and is connected to computer or word processor for the
    input/output of text or data to a mainframe computer.

Wide Area Network (WAN) - an information transport system for
    data transfer among remotely located office workstations,
    file servers, and peripherals via an interconnecting
    medium between different office buildings, building
    complexes, or stations.

Workstation (also deskstation) - the local combination of a
    CRT, storage, and keyboard; capable of performing the
    functions of word processing, graphics, data terminal,
    and/or microcomputer; the basic unit which supports office
    automation as defined above.

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APPENDIX J
NARDAC SAN FRANCISCO MISSION STATEMENT

(MARKETING PLAN, 1986, p. 5)

To provide non-tactical automated data processing (ADPE) support to Navy and DOD components on a cost reimbursable basis.

NARDAC SAN FRANCISCO COMMAND GOALS

1. Provide effective service to clients.

2. Promote use of ADP products and services among clients.

3. Conduct efficient operations for clients.

4. Support Navy/NAVDAC ADP Program.

5. Attract/Retain quality workforce within the guidelines of the Navy's EEO Program.

6. Maintain an ADP environment of technological excellence.

7. Maintain an on-going Community Relations Program.

8. Maintain a viable Internal Review Program.

APPENDIX K
NARDAC SAN DIEGO MISSION STATEMENT

(NARDAC SAN DIEGO INSTRUCTION 5400.3)

To provide information resources management (IRM) support to Navy and DOD components on a cost reimburseable basis.
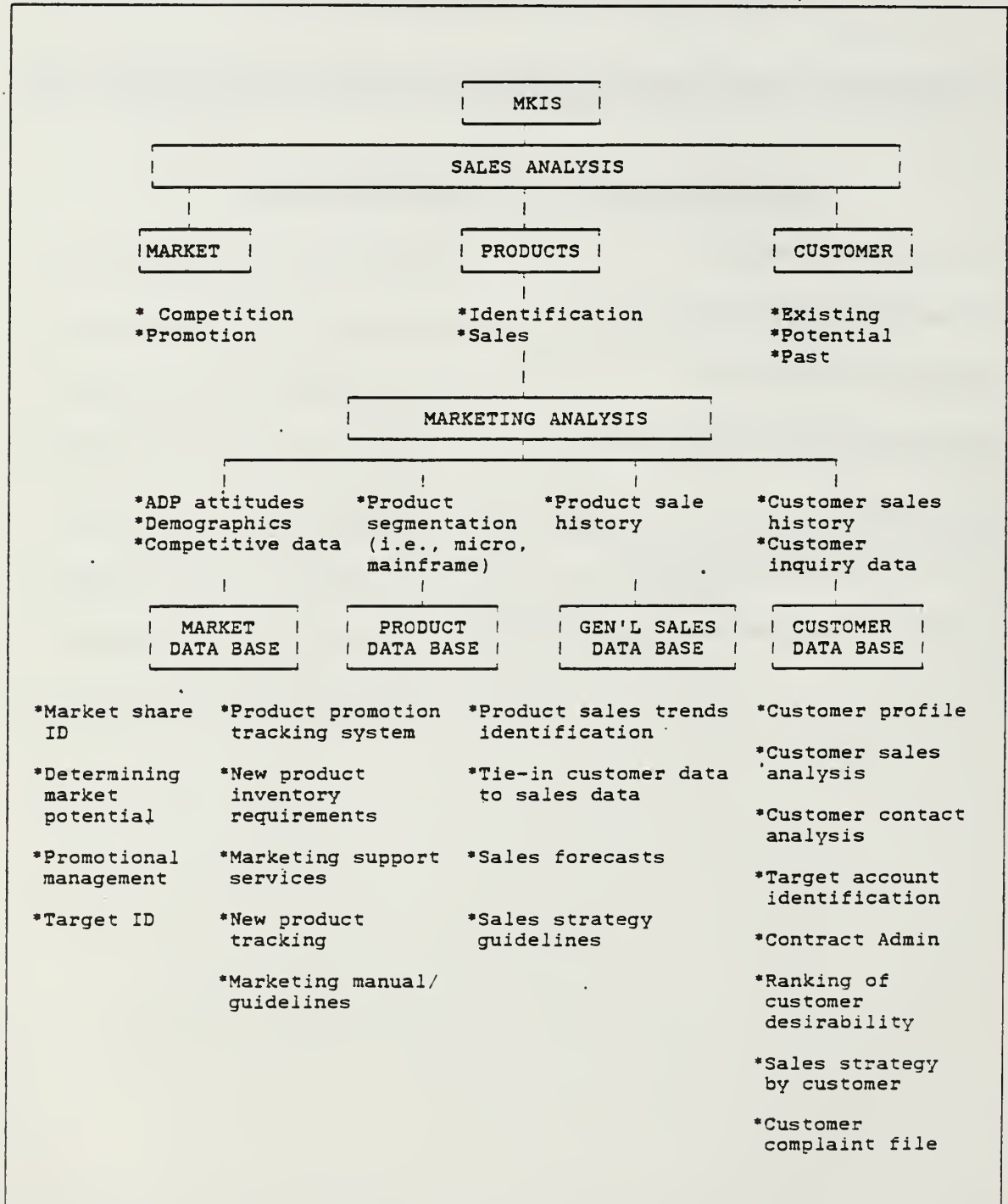
NARDAC SAN DIEGO COMMAND GOALS

1. Increase customer satisfaction.

2. Increase employee job satisfaction.

3. Keep pace with technology.

4. Increase organizational effectiveness.

5. Control costs.

6. Create a viable marketing program.

7. Transition smoothly into new computer center.

APPENDIX L
MARKETING INFORMATION SYSTEM FRAMEWORK ILLUSTRATION

(NARDAC SAN DIEGO Letter, 17 October 1985)

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                          ┌─────────┐
                          │  MKIS   │
                          └─────────┘
        ┌──────────────────────────────────────────────┐
        │              SALES ANALYSIS                   │
        └──────────────────────────────────────────────┘
             │                    │                 │
        ┌─────────┐          ┌──────────┐       ┌───────────┐
        │ MARKET  │          │ PRODUCTS │       │ CUSTOMER  │
        └─────────┘          └──────────┘       └───────────┘
                                  │
       * Competition         *Identification     *Existing
       *Promotion            *Sales              *Potential
                                  │               *Past
                          ┌──────────────────┐
                          │ MARKETING ANALYSIS│
                          └──────────────────┘
        ┌────────────────┬──────────────┬────────────────┐
        │                │              │                │
   *ADP attitudes   *Product        *Product sale    *Customer sales
   *Demographics    segmentation    history          history
   *Competitive data (i.e., micro,                   *Customer
                    mainframe)                        inquiry data
        │                │              │                │
   ┌──────────┐     ┌──────────┐   ┌───────────┐    ┌───────────┐
   │ MARKET   │     │ PRODUCT  │   │ GEN'L SALES│   │ CUSTOMER  │
   │ DATA BASE│     │ DATA BASE│   │ DATA BASE  │   │ DATA BASE │
   └──────────┘     └──────────┘   └───────────┘    └───────────┘
```

*Market share   *Product promotion   *Product sales trends   *Customer profile
 ID   tracking system   identification
                                                                  *Customer sales
*Determining   *New product   *Tie-in customer data   analysis
 market   inventory   to sales data
 potential   requirements   *Customer contact
                                                                   analysis
*Promotional   *Marketing support   *Sales forecasts
 management   services   *Target account
                                                                   identification
*Target ID   *New product   *Sales strategy
                    tracking   guidelines   *Contract Admin

                   *Marketing manual/   *Ranking of
                    guidelines   customer
                                                                   desirability

                                                                  *Sales strategy
                                                                   by customer

                                                                  *Customer
                                                                   complaint file

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